
BULLETIN

of the

Chicago Herpetological Society



Volume 37, Number 12
December 2002



BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY

Volume 37, Number 12

December 2002

Position of the Chicago Herpetological Society regarding Commercial Trade of Reptiles and Amphibians in Illinois	209
Biogeography of the Herpetofauna of the Beaver Archipelago: A Synthesis and Reevaluation	
. . . John S. Placyk, Jr., and James C. Gillingham	210
Notes on <i>Elgaria kingi ferruginea</i> in Jalisco, México: Altitude, Distribution and Habitat	
. . . Paulino Ponce-Campos and Sara M. Huerta-Ortega	215
Riparian Tadpoles of Punjab, Pakistan: <i>Bufo stomaticus</i> Lütken, 1862	Muhammad Sharif Khan 216
HerPET-POURRI	Ellin Beltz 220
Herpetology 2002	223
Unofficial Minutes of the CHS Board Meeting, November 15, 2002	225
Index to Scientific Names of Amphibians and Reptiles for Volume 37 (2002)	226
Author–Title Index for Volume 37 (2002)	229
Advertisements	231
News and Announcements	232

Cover: Female Bornean tree-hole frog, *Metaphrynella sundana*. Photograph © 2002 by Björn Lardner.

STAFF

Editor: Michael A. Dloogatch — madadder0@aol.com

Advertising Manager: Ralph Shepstone

2002 CHS Board of Directors

Jack Schoenfelder, President

Lori King, Vice-President

Greg Brim, Treasurer

Emily Forcade, Recording Secretary

Steve Sullivan, Corresponding Secretary

Michael Redmer, Publications Secretary

Michael A. Dloogatch, Membership Secretary

Dan Bavirsha, Sergeant-at-Arms

Tom Anton, Member-at-Large

Darin Croft, Member-at-Large

Ron Humbert, Member-at-Large

Jenny Vollman, Member-at-Large

The Chicago Herpetological Society is a nonprofit organization incorporated under the laws of the state of Illinois. Its purposes are education, conservation and the advancement of herpetology. Meetings are announced in this publication, and are normally held at 7:30 P.M., the last Wednesday of each month.

Membership in the CHS includes a subscription to the monthly *Bulletin*. Annual dues are: Individual Membership, \$25.00; Family Membership, \$28.00; Sustaining Membership, \$50.00; Contributing Membership, \$100.00; Institutional Membership, \$38.00. Remittance must be made in U.S. funds. Subscribers outside the U.S. must add \$12.00 for postage. Send membership dues or address changes to: Chicago Herpetological Society, Membership Secretary, 2430 N. Cannon Drive, Chicago, IL 60614.

Manuscripts published in the *Bulletin of the Chicago Herpetological Society* are not peer reviewed. Manuscripts should be submitted, if possible, on IBM PC-compatible or Macintosh format diskettes. Alternatively, manuscripts may be submitted in duplicate, typewritten and double spaced. Manuscripts and letters concerning editorial business should be sent to: Chicago Herpetological Society, Publications Secretary, 2430 N. Cannon Drive, Chicago, IL 60614. **Back issues** are limited but are available from the Publications Secretary for \$2.50 per issue postpaid. **Visit the CHS home page at** <<http://www.Chicagoherp.org>>.

The *Bulletin of the Chicago Herpetological Society* (ISSN 0009-3564) is published monthly by the Chicago Herpetological Society, 2430 N. Cannon Drive, Chicago IL 60614. Periodicals postage paid at Chicago IL. **Postmaster:** Send address changes to: Chicago Herpetological Society, Membership Secretary, 2430 N. Cannon Drive, Chicago IL 60614.

**Position of the Chicago Herpetological Society
regarding Commercial Trade of Reptiles and Amphibians in Illinois**

The mission of the Chicago Herpetological Society (CHS) is to educate its members and the general public; to promote the conservation of all wildlife in general and of herpetofauna in particular; and to achieve a closer cooperation and understanding between amateur and professional herpetologists. Based on this mission statement and applicable Illinois and federal laws, the CHS has developed this document to outline our position regarding the commercial trade of reptiles and amphibians. We hope that this document will act as a guideline for all people involved in the trade of reptiles and amphibians in Illinois.

The CHS supports responsible, ethical, and lawful conduct in the trade of reptiles and amphibians. Irresponsible, unethical, or illegal trade in reptiles and amphibians reflects poorly on the entire herpetological community and may also lead to the passage of laws restricting the ownership of reptiles and amphibians.

We support the legal sale, trade, and captive maintenance of reptiles and amphibians and endorse the concept of reptile shows and expos, animal vendors, breeders, and pet stores. However, the CHS only participates in such venues through booths and displays that have been formally approved by the Board of Directors. CHS members only officially represent the CHS when working at these displays.

We encourage knowledgeable people to educate the public about the needs of reptiles and amphibians and to help prospective owners choose animals that are appropriate to their circumstances and abilities. We expect those involved with reptiles and amphibians to deal with them responsibly and ethically: namely, animals must be housed in a proper environment, transported securely and as comfortably as possible, given a proper diet and appropriate medical care, and provided protection from other animals and untrained people.

We recommend that animals intended to be pets be from captive-bred stock. Captive-bred animals acclimate better to captivity, are readily available, and their use puts no pressure on wild populations. We urge all animal vendors, event organizers, store proprietors, breeders, and consumers to know and abide by federal, state, and local laws, including the Illinois Dangerous Animals Act, state and federal Endangered Species Acts, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

We encourage event organizers to contractually bind vendors to abide by the above recommendations and we encourage all CHS members and affiliates to follow these guidelines in the name of legal, ethical, and humane trade in reptiles and amphibians in the state of Illinois.

Adopted by the Board of Directors December 13, 2002

Biogeography of the Herpetofauna of the Beaver Archipelago: A Synthesis and Reevaluation

John S. Placyk, Jr.
Department of Ecology and Evolutionary Biology
University of Tennessee
Knoxville, TN 37996
E-mail: jplacyk@utk.edu

James C. Gillingham
Department of Biology
Central Michigan University
Mt. Pleasant, MI 48859

The Beaver Archipelago is located in northeastern Lake Michigan approximately 25–30 km from both the lower and upper peninsulas of Michigan. The archipelago includes one main island (i.e., Beaver), three moderately large islands (i.e., Garden, High, Hog), and six smaller islands (i.e., Hat, Pismire, Shoe, Squaw, Trout, and Whiskey) (Table 1). The islands support a subset of the reptile and amphibian species that are found on the surrounding Michigan mainland (Harding, 1997). The origin of the archipelago herpetofauna is commonly believed to be the lower peninsula of Michigan due to the presence of several species that are not found in the upper peninsula of Michigan (e.g., *Thamnophis sauritus septentrionalis*, *Lampropeltis t. triangulum*). However, there is little evidence to support the hypothesis that all of the reptiles and amphibians originated from the lower peninsula rather than from the upper peninsula or from both peninsulas. Given the geological history of the area (see below), it is possible that animals could have migrated to the islands from both peninsulas with few barriers impeding their journey. Ongoing research on the genetic composition of island and mainland populations of *Thamnophis s. sirtalis* and *Plethodon cinereus* will hopefully provide more substantial evidence as to the origin of the island populations in the near future (Placyk, unpub. data). To better understand the processes underlying the herpetofaunal colonization of the archipelago, information on current reptile and amphibian distributions is needed.

Records of Beaver Archipelago herpetofaunal distributions are scattered throughout obscure geographic distribution notes, journals, and books. Thus, an attempt to determine the distribution of reptiles and amphibians in the archipelago is a daunting task. In addition, many of the surveys used in past studies

may be outdated, as some were conducted over 50 years ago (e.g., Hatt et al., 1948). Our goal is to synthesize the information available from past references with survey data collected during the summers of 2001 and 2002 to provide a more easily accessible and complete inventory of the current Beaver Archipelago herpetofaunal distributions. In addition, we will use our recent surveys to verify the distribution of species as historically recorded.

Recent History of the Archipelago

The recent geological history of the archipelago is marked by drastic lake level fluctuations due, in part, to complex interactions between the retreating Laurentide Ice Sheet, differential isostatic rebound, and regional climate change (Petty et al., 1996). Specifically, 13,000 to 8,900 years before present (cal yr BP), directly following the last glaciation of the Holocene, the largest and latest proglacial lake (i.e., Lake Algonquin) occupied the three upper Great Lake basins (Larsen, 1987). During this time, the lake level around the archipelago stood at ca. 250 m with only the higher elevation islands (i.e., Beaver and High Islands; Table 1) remaining emerged (Kapp et al., 1969). Starting ca. 8,900 to 7,800 cal yr BP, lake levels dropped allowing the archipelago to be connected with the lower peninsula of Michigan and separated from the upper peninsula by the Mackinac River, which may have only been 1.6 km wide in some areas (Hough, 1958; Kapp et al., 1969; Dietrich, 1988). This low lake level persisted until ca. 7,800 to 6,200 cal yr BP when a drastic increase in the lake level (i.e., the Nipissing Transgression), once again, caused all but the higher elevation islands to become submerged (Hough, 1958; Kapp et al., 1969; Dietrich, 1988; Petty et al., 1996). Recently (i.e., 4,500 cal yr BP to present day), islands of low elevation have reemerged (Hough, 1958; Kapp et al., 1969; Dietrich, 1988). As a result of these fluctuating lake levels, reptiles and amphibians could have colonized the Beaver Archipelago via various methods.

Soon after the Laurentian Ice Sheet retreated from the Lake Michigan basin, animals could have migrated to the highest elevation islands via rafting or swimming. In fact, Holman (1995, 1998) provides evidence that the amphibian and reptile species pools remained close to the edges of the retreating ice sheets and that colonization from the south was rapid. Although this scenario may not necessarily apply to the islands, the possibility exists. Once the lake levels dropped, 8,900 to 7,900 cal yr BP, the islands were attached to the lower peninsula of Michigan via a landbridge and separated from the upper peninsula of Michigan by less than 2 km of water providing ample opportunity for animals to migrate from both peninsulas. High lake levels ca. 7,800 to 6,200 cal yr BP then exterminated the reptiles and amphibians from all but Beaver

Table 1. Area and shoreline length of the Beaver Archipelago islands, Michigan, USA (modified from Hatt et al., 1948). Islands are listed in descending order by area.

Island	Area (ha)	Shoreline (km)
Beaver Island	15130.0	67.0
Garden Island	1989.0	33.3
High Island	1494.5	20.1
Hog Island	1023.9	25.8
Whiskey Island	52.3	3.2
Trout Island	46.6	2.9
Squaw Island	30.6	2.6
Hat Island	6.5	1.0
Shoe Island	1.3	0.5
Pismire Island	1.0	0.5

and High Islands. The recent reemergence of the other islands in the archipelago has been followed by recolonization from Beaver and High Islands and possibly from mainland sources. Thus, the well-documented geological history of the Beaver Archipelago provides researchers with ample evidence by which to form hypotheses as to the origin and distribution of reptiles and amphibians in the archipelago. In addition, island biogeography theories (e.g., MacArthur and Wilson, 1967) can be applied to further explain the current distribution of reptiles and amphibians in the archipelago; however, before a task such as that is undertaken, information on current distributions is needed.

Accounts of Species and Subspecies

All scientific and standard names used in this article are those sanctioned by the Society for the Study of Amphibians and Reptiles via the Committee on Standard English and Scientific Names (2000). Also, please note that we do not consider the existence of viable reptile and amphibian populations on Hat, Pismire, and Shoe Islands, as extensive surveys of these small, sandy, barren islands do not typically produce even single individuals of any reptile or amphibian species (i.e., with the exception of an individual *Nerodia sipedon* on rare occasion).

Anura

Bufo americanus americanus. Eastern American Toad. This species has been found on most all of the islands in the archipelago including Beaver Island (Gillingham, 1988; Hatt et al., 1948), Garden Island (Phillips et al., 1965), High Island (Hatt et al., 1948), Hog Island (Placyk et al., 2002), Squaw Island (Hatt et al., 1948), Trout Island (Hatt et al., 1948), and Whiskey Island (Hatt et al., 1948) (Placyk and Gillingham, pers. obs.). The success of this species in the archipelago is probably due, in part, to its ability to produce massive numbers of offspring and its generalist nature (in terms of both habitat and prey requirements). In the past, it has been suggested that some of the *B. a. americanus* populations of the Lake Michigan islands constitute a separate subspecies, owing to their unusually large size when compared to mainland conspecifics, but here, we make no such distinction (see discussion on *B. a. "alani"* below).

Hyla chrysoscelis and *Hyla versicolor*. Gray Treefrog. Gray treefrogs are known to occur on Beaver and Trout Islands (Hatt et al., 1948); however, extensive anuran surveys (call surveys or otherwise), especially of the islands with inland bodies of water, are lacking and need to be conducted before conclusions can be made on any of the anuran distributions in the archipelago. In addition, our recent surveys were unable to verify the existence of gray treefrogs on Trout Island.

Pseudacris crucifer crucifer. Northern Spring Peeper. This species occurs on Beaver Island (Gillingham, 1988; Hatt et al., 1948; Placyk and Gillingham, pers. obs.) and Trout Island (Hatt et al., 1948). It is possible that this species occurs on other islands in the archipelago, but given its small size, it may be difficult to detect. As with the gray treefrog, our

recent surveys were unable to detect individuals of spring peepers on Trout Island.

Rana catesbeiana. American Bullfrog. American bullfrogs are only known from Beaver Island (Gillingham, 1988; Hatt et al., 1948), but recent surveys in the summers of 2001 and 2002 have failed to produce any new specimens (Placyk, pers. obs.). If the bullfrog populations on Beaver Island have declined or have been extirpated, the reasons for such events are not clear.

Rana clamitans melanota. Northern Green Frog. Long (1993) lists this species as being rare throughout the islands of Lake Michigan, but recent surveys suggest that it is quite common on all of the islands with inland bodies of water (i.e., Beaver, Garden, and High Islands) (Gillingham, 1988; Bowen and Gillingham, 2002e; Placyk et al., 2002).

Rana pipiens. Northern Leopard Frog. Leopard frogs are common on Beaver Island (Hatt et al., 1948; Placyk and Gillingham, pers. obs.) and can, on rare occasion, be found on Garden Island (Phillips et al., 1965).

Rana sylvatica. Wood Frog. This species is only known from Beaver Island (Hatt et al., 1948; Placyk and Gillingham, pers. obs.), but given its terrestrial and secretive nature, it may exist on other islands in the archipelago.

Caudata

Ambystoma laterale. Blue-spotted Salamander. This species is known to occur on Beaver Island (Gillingham, 1988), Garden Island (Phillips et al., 1965), High Island (Placyk et al., 2002) and Trout Island (Hatt et al., 1948); however, given the secretive fossorial nature of ambystomatid salamanders, populations may exist undetected on other islands. Extensive surveys focusing on ambystomatid salamanders throughout the islands are lacking, and until such surveys are conducted, the complete distribution of this species in the archipelago will remain speculative. In addition, our 2001 and 2002 surveys did not produce individuals of *A. laterale* from either Garden or Trout Islands, and until the existence of this species is verified on these two islands, we would suggest the presence of viable populations on these islands is questionable.

Ambystoma maculatum. Spotted Salamander. This species is only known to occur on Beaver Island (Gillingham, 1988; Placyk and Gillingham, pers. obs.), but the existence of populations on other islands cannot be ruled out for the same reasons listed for *A. laterale*. Ample breeding sites (e.g., small lakes, ponds, and other small bodies of standing water) are available on Garden, High, and Trout Islands suggesting that the distribution of this species may mirror that of *A. laterale*.

Notophthalmus viridescens. Eastern Newt. Long (1993) listed this species as being rare in the Beaver Archipelago, but recent surveys show that it is found on all of the islands with inland bodies of water (i.e., Beaver, Garden, and High Islands) (Bowen and Gillingham, 2002d; Placyk et al. 2002; Placyk and Gillingham, pers. obs.).

Plethodon cinereus. Eastern Red-backed Salamander. By far the most common woodland salamander in the Great Lakes

region (Harding, 1997), if not the United States, this species is known to occur on Beaver Island (Gillingham, 1988; Hatt et al., 1948), Garden Island (Phillips et al., 1965), High Island (Placyk et al., 2002), and Squaw Island (Long, 1993) (Placyk and Gillingham, pers. obs.). Although voucher specimens have not been collected from each island in the archipelago, it is generally accepted that *P. cinereus* occurs on all of the Beaver Archipelago islands.

Serpentes

Diadophis punctatus edwardsii. Northern Ring-necked Snake. This species can be found on Beaver Island (Hatt et al., 1948) and Garden Island (Phillips et al., 1965). The distribution of this species may be limited by prey availability, as it specializes on *P. cinereus* in the Great Lakes region. In fact, the greatest densities of *P. cinereus* are on Beaver and Garden Islands (Placyk and Gillingham, pers. obs.) with only one specimen ever being found on High Island (Placyk et al., 2002). The assumption that *P. cinereus* occurs on every island in the archipelago, may, therefore, be misleading and warrants further investigation.

Lampropeltis triangulum triangulum. Eastern Milksnake. This species can be found on Beaver Island (Hatt et al., 1948), Garden Island (Bowen and Gillingham, 2002c), High Island (Hatt et al., 1948), and Whiskey Island (Hatt et al., 1948). The diet of *L. t. triangulum* consists mainly of small mammals, but snakes, lizards, birds and reptile and bird eggs are also taken (Harding, 1997); therefore, the distribution of this species in the archipelago is probably strongly influenced by the presence of vertebrate prey. Our 2001 and 2002 surveys did not produce verification of any Whiskey Island populations of eastern milksnakes, and given the depauperate fauna (e.g., potential prey) of the island, we question if viable populations ever existed there.

Nerodia sipedon. Northern Watersnake. By far the most common snake in the archipelago, most likely due, in part, to its highly aquatic nature. This species is found along the shores of Beaver Island (Hatt et al., 1948), Garden Island, High Island (Placyk et al., 2002), Hog Island (Placyk and Bowen, pers. obs.), Squaw Island (Hatt et al., 1948), and Whiskey Island (Hatt et al., 1948) (Placyk and Gillingham, pers. obs.). It most likely occurs on all of the remaining islands in the archipelago. In addition, populations are found at the inland lakes of Beaver, Garden, and High Islands (Gillingham, 1988; Placyk et al., 2002; Placyk and Gillingham, pers. obs.)

Opheodrys vernalis. Smooth Greensnake. Greensnakes can be found only on Beaver Island (Gillingham, 1988; Placyk and Gillingham, pers. obs.). This species is common in grassy openings and fields, which most islands in the archipelago lack. This species may also be limited by prey availability, as it frequently feeds on caterpillars that may not be present unless specific plant species are present.

Storeria occipitomaculata occipitomaculata. Northern Red-bellied Snake. This species is known from Beaver Island (Gillingham, 1988), High Island (Placyk et al., 2002) and

Squaw Island (Hatt et al., 1948). Red-bellied snakes most likely occur on other islands in the archipelago, but due to the secretive nature of snakes in this genus, they may have gone undetected. Their diet consists mainly of small invertebrates (e.g., snails, slugs, worms), which are common in the archipelago. Our recent surveys did verify the existence of red-bellied snakes on Beaver, High, and Squaw Islands.

Thamnophis sirtalis sirtalis. Eastern Gartersnake. The eastern gartersnake is probably the second most common snake species in the archipelago. They can be found in suitable habitat on Beaver Island, Garden Island, High Island, Hog Island, Squaw Island, and Trout Island (Hatt et al., 1948). The success of this species in the archipelago can most likely be attributed to their generalist nature. Prey of *T. s. sirtalis* include earthworms, leeches, fish, amphibians and roadkilled mice and birds (Harding, 1997). In addition, *T. s. sirtalis* can be found just about anywhere, including the margins of lakes and ponds, grassy fields, old-growth forests, and junkyards (Harding, 1997; Placyk, pers. obs.). Our 2001 and 2002 surveys verified the existence of *T. s. sirtalis* populations on all of the islands listed by Hatt et al. (1949).

Thamnophis sauritus septentrionalis. Northern Ribbon-snake. This species is known only from Beaver Island, where it can be found on the margins of inland bodies of water (Hatt et al., 1948; Placyk and Gillingham, pers. obs.). Unlike *T. s. sirtalis*, *T. sauritus septentrionalis* is primarily an amphibian specialist and is limited by potential prey distributions.

Testudines

Chelydra serpentina serpentina. Eastern Snapping Turtle. This species is found throughout Lake Michigan and occurs in the inland lakes of Beaver Island (Hatt et al., 1948; Placyk and Gillingham, pers. obs.), as well as along the shoreline of Garden Island (Bowen and Gillingham, 2002a). However, the inland lake on High Island (i.e., Lake Maria) does not support a snapping turtle population (Placyk and Gillingham, pers. obs.).

Chrysemys picta. Painted Turtle. Painted Turtles can be found in almost any standing body of water on Beaver Island (Hatt et al., 1948; Placyk and Gillingham, pers. obs.), as well as in Lake Maria on High Island (Placyk et al., 2002). In addition, Garden Island supports a population of large, light-colored painted turtles in several bays surrounding the western side of the island. This population primarily subsists on a diet of crayfish caught while foraging in Lake Michigan (Rowe, unpubl. data).

Notes on *Bufo americanus* “*alani*”

Long (1982, 1993) observed a greater frequency of very large *Bufo americanus* in the Lake Michigan island toad populations and subsequently suggested that they represented a new subspecies. While larger than average *B. a. americanus* still do occur on most of the Beaver Archipelago islands (Placyk and Gillingham, pers. obs.), there is little support other than size differences to suggest that these toads represent a separate subspecies of *B. americanus*. In fact, many historically recog-

Table 2. Documented distributions of reptile and amphibian species and subspecies throughout the Beaver Archipelago of Lake Michigan (Bowen and Gillingham, 2002a, 2002b, 2002c, 2002d, 2002e; Gillingham, 1988; Hatt et al., 1948; Phillips et al., 1965; Placyk et al., 2002; Placyk and Gillingham, pers. obs.) Islands are listed in descending order by area.

Species or subspecies	Beaver Island	Garden Island	High Island	Hog Island	Whiskey Island	Trout Island	Squaw Island
<i>Ambystoma laterale</i>	X	X	X			X	
<i>Ambystoma maculatum</i>	X						
<i>Notophthalmus viridescens</i>	X	X	X				
<i>Plethodon cinereus</i>	X	X	X				X
<i>Bufo a. americanus</i>	X	X	X	X	X	X	X
<i>Hyla versicolor</i>	X					X	
<i>Pseudacris c. crucifer</i>	X					X	
<i>Rana catesbeiana</i>	X						
<i>Rana clamitans</i>	X	X	X				
<i>Rana sylvatica</i>	X						
<i>Rana pipiens</i>	X	X					
<i>Chelydra s. serpentina</i>	X	X					
<i>Chrysemys picta</i>	X	X	X				
<i>Diadophis punctatus edwardsii</i>	X	X					
<i>Lampropeltis t. triangulum</i>	X	X	X		X		
<i>Nerodia sipedon</i>	X	X	X	X	X		X
<i>Opheodrys vernalis</i>	X						
<i>Storeria o. occipitomaculata</i>	X		X				X
<i>Thamnophis s. sirtalis</i>	X	X	X	X		X	X
<i>Thamnophis sauritus septentrionalis</i>	X						
Total number of species	20	12	10	3	3	5	5

nized subspecies are now being dismissed via the results of modern molecular techniques (e.g., Burbrink et al., 2000; Janzen et al., 2002). For the populations of *B. americanus* that Long (1982, 1993) suggested be listed as a new subspecies, other than size, there are no other known morphological, behavioral, or life history traits that differ from typical *B. a. americanus*. In addition, the genetic composition of these large toads is not known to differ from their smaller conspecifics. Thus, these size differences may be attributed to differences in population structure, as related to age, or to phenotypic plasticity. In fact, insular gigantism among reptiles and amphibians (e.g., Blazquez et al., 1997; Gibbons et al., 1978; Mori, 1994) is common, but has not warranted the creation of new subspecies in the past. Until further evidence is amassed to support the distinctiveness of this proposed subspecies, we would recommend that they continue to be classified as *B. a. americanus* and are considered as such in this article and by the Committee on Standard English and Scientific Names (2000).

Summary

A synthesis of past herpetofauna distribution records along with information from recent surveys suggests that the islands

of the Beaver Archipelago support a diverse subset of mainland Michigan reptiles and amphibians. While, not explicitly examined in this article one can see from the information above that there appears to be a positive relationship between area and diversity for the reptile and amphibian species of the Beaver Archipelago (i.e., the greater the area of the island, the greater the diversity). Table 2 illustrates this trend with the greatest diversity of reptiles and amphibians occurring on the largest island (i.e., Beaver Island) and the least number of species occurring on the smaller islands. If gray treefrogs and northern spring peepers are no longer found on Trout Island and if eastern milksnakes are no longer found on Whiskey Island, the trend becomes even clearer. Trends of this sort are well known in island systems (MacArthur and Wilson, 1967) and have also recently been shown to exist for four other Great Lakes archipelagos (i.e., Lake Erie Islands, Georgian Bay Islands, St Lawrence Islands, and Apostle Islands) (Hecnar et al., 2002). In our system, Hog Island appears to have an unusually low number of reptile and amphibian species. Reasons for such low numbers may result from a lack of extensive surveys or due to anthropogenic causes (e.g., the release of destructive domesticated porcines in the mid 1900s).

In the future, information on species distributions may be

vital when deciding how and where to allocate conservation plans. Our inability to verify the existence of populations of gray treefrogs and northern spring peepers on Trout Island and eastern milksnakes on Whiskey Island may indicate that decreases in diversity or local extinctions may already threaten the herpetofauna of the Beaver Archipelago. Without knowing the historical distribution of reptiles and amphibians, many conservationists are left without crucial information that may aid in their efforts. With this article, we hope to provide such information for the Beaver Archipelago. In addition, the

information provided here can form the basis for hypotheses as to the origin and maintenance of the current herpetofaunal communities in the Beaver Archipelago.

Acknowledgments

We thank Michael J. Seider for providing transportation to and from the Beaver Archipelago Islands and Kevin G. Smith for reviewing the manuscript. JSP was supported by Summer Research Grants from the Department of Ecology and Evolutionary Biology at the University of Tennessee, Knoxville.

Literature Cited

- Blazquez, M. C., R. Rodriguez-Estrella and M. Delibes. 1997. Escape behavior and predation risk of mainland and island spiny-tailed iguanas (*Ctenosaura hemilopha*). *Ethology* 103:990-998.
- Bowen, K. D., and J. C. Gillingham. 2002a. Geographic distribution. *Chelydra serpentina*. *Herpetological Review* 33:60.
- Bowen, K. D., and J. C. Gillingham. 2002b. Geographic distribution. *Chrysemys picta*. *Herpetological Review* 33:63.
- Bowen, K. D., and J. C. Gillingham. 2002c. Geographic distribution. *Lampropeltis triangulum*. *Herpetological Review* 33:65.
- Bowen, K. D., and J. C. Gillingham. 2002d. Geographic distribution. *Notophthalmus viridescens*. *Herpetological Review* 33:68.
- Bowen, K. D., and J. C. Gillingham. 2002e. Geographic distribution. *Rana clamitans*. *Herpetological Review* 33:65.
- Burbrink, F. T., R. Lawson and J. B. Slowinski. 2000. Mitochondrial DNA phylogeography of the polytypic North American rat snake (*Elaphe obsoleta*): A critique of the subspecies concept. *Evolution* 54:2107-2118.
- Committee on Standard English and Scientific Names. 2000. Scientific and standard English names of amphibians and reptiles of North America north of Mexico, with comments regarding confidence in our understanding. Society for the Study of Amphibians and Reptiles Herpetological Circular No. 29.
- Dietrich, R. V. 1988. The geological history of Beaver Island. *The Journal of Beaver Island History* 3:59-77.
- Gibbons, J. W., G. H. Keaton, J. P. Schubauer, J. L. Greene, D. H. Bennett, J. R. McAuliffe and R. R. Sharitz. 1978. Unusual population size structure in freshwater turtles on barrier islands. *Georgia Journal of Science* 37:155-159.
- Gillingham, J. C. 1988. The amphibians and reptiles of Beaver Island. *Journal of Beaver Island History* 3:87-115.
- Harding, J. H. 1997. Amphibians and reptiles of the Great Lakes region. Ann Arbor: The University of Michigan Press.
- Hatt, R. T., J. Van Tyne, L. C. Stuart, C. H. Pope and A. B. Grobman. 1948. Island life: A study of the land vertebrates of the islands of eastern Lake Michigan. Bloomfield Hills, MI: Cranbrook Press.
- Hecnar, S. J., G. S. Casper, R. W. Russell, D. R. Hecnar and J. N. Robinson. 2002. Nested species assemblages of amphibians and reptiles on islands in the Laurentian Great Lakes. *Journal of Biogeography* 29:475-489.
- Holman, J. A. 1995. Pleistocene amphibians and reptiles in North America. New York: Oxford University Press.
- . 1998. Amphibian recolonization of the midwestern states in the postglacial Pleistocene. Pp. 9-15. *In*: M. J. Lannoo, editor, Status and Conservation of Midwestern Amphibians. Iowa City: University of Iowa Press.
- Hough, J. L. 1958. Geology of the Great Lakes. Urbana, IL: University of Illinois Press.
- Janzen, F. J., J. G. Krenz, T. S. Haselkorn, E. D. Brodie, Jr., and E. D. Brodie III. 2002. Molecular phylogeography of common garter snakes (*Thamnophis sirtalis*) in western North America: Implications for regional historical forces. *Molecular Ecology* 11: 1739-1751.
- Kapp, R. O., S. Bushouse and B. Foster. 1969. A contribution to the geology and forest history of Beaver Island, Michigan. *Proceedings of the 12th Conference on Great Lake Research* 1969:225-236.
- Larsen, C. E. 1987. Geological history of glacial Lake Algonquin and the upper Great Lakes. United States Geological Survey Bulletin No. 1801.
- Long, C. A. 1982. Rare gigantic toads, *Bufo americanus*, from Lake Michigan isles. *Reports of the Museum of Natural History, University of Wisconsin* 18:15-19.
- . 1993. Biogeography of the reptiles and amphibians of the Lake Michigan isles. *Bull. Chicago Herp. Soc.* 28(10):214-218.

- MacArthur, R. H., and E. O. Wilson. 1967. The theory of island biogeography. Princeton, NJ: Princeton University Press.
- Mori, A. 1994. Ecological and morphological characteristics of the Japanese rat snake, *Elaphe climacophora*, on Kammuri-jima island: A possible case of insular gigantism. *The Snake* 26:11-18.
- Petty, W. H., P. A. Delcourt and H. R. Delcourt. 1996. Holocene lake-level fluctuations and beach-ridge development along the northern shore of Lake Michigan, USA. *Journal of Paleolimnology* 15:147-169.
- Phillips, C. J., J. T. Ozoga and L. C. Drew. 1965. The land vertebrates of Garden Island, Michigan. *Jack-Pine Warbler* 43:20-25.
- Placyk, J. S., Jr., M. J. Seider and J. C. Gillingham. 2002. New herpetological records for High and Hog Islands of the Beaver Archipelago, Charlevoix County, Michigan. *Herpetological Review* 33:230.

Bull. Chicago Herp. Soc. 37(12):215, 2002

Notes on *Elgaria kingii ferruginea* in Jalisco, México: Altitude, Distribution and Habitat

Paulino Ponce-Campos and Sara M. Huerta-Ortega

Bosque Tropical, A. C.

Apartado Postal 5-515

Guadalajara, Jalisco, 45042

Mexico

E-mail: bosquetropical@email.com

The rusty alligator lizard, *Elgaria kingii ferruginea*, “occurs in subtropical, mountainous habitats at a general elevation of about 6000 ft . . .” (Webb, 1970). The altitude at the type locality, in Durango, is also given as ca. 6000 ft (1829 m) (Webb, 1962, 1970).

We here report on three specimens of this subspecies: one found in a bunch of grass in oak-pine forest, 15 November 1992 (UAG, M-R 295) at 1600 m, “Bosque de La Primavera,” 8 km SW of Guadalajara, snout–vent length (SVL) = 11.2 cm, tail length = 14.8 cm (regenerated); the second (released in situ) in oak-pine forest also from a bunch of grass, 17 July 1999 (1710 m, 20°52'N; 103°29'W); another (UAG, M-R-428) under a rock covered by litter in an area of oak forest at 1516 m, 1 January 2001 (dry season, trees without leaves) (20°54'N; 103°34'W). This third site is located next to a grassy area and just adjacent to dry tropical forest, in a place with several rocks. As illustrated in Webb (1962), and based

on the altitudinal record, this subspecies occurs in pine forest transition through oak forest, throughout its distribution.

These three records are in the vicinity of Guadalajara, about 70–75 km east of the nearest published record (Webb, 1970). The first two exemplars were found less than 15 km from the urban area. The three localities were at altitudes ranging from 1516 to 1710 m (4974–5610 ft, somewhat lower than the literature records).

Acknowledgments

We are in debt to Professor Emeritus Hobart M. Smith for his advice and information, to Dr. Robert G. Webb for his information, and to K. Shaun O'Neil, Patty Ascencio and Alan Heinze-Yothers for help with the English version. We also thank H. William Peterson for helping us to submit the manuscript and Sandie Slovin for her communication help.

Literature Cited

- Webb, R. G. 1962. A new alligator lizard (genus *Gerrhonotus*) from western Mexico. *Herpetologica* 18(2):73-79.
- . 1970. *Gerrhonotus kingii*. *Catalogue of American Amphibian and Reptiles*: 97.1-97.4

Riparian Tadpoles of Punjab, Pakistan: *Bufo stomaticus* Lütkin, 1862

Muhammad Sharif Khan*
Herpetological Laboratory
15/6 Darul Sadar North
Rabwah 35460
PAKISTAN

Abstract

The tadpole of common Pakistani toad *Bufo stomaticus* is described. The toad’s breeding ecology and mortality are discussed.

Introduction

The Indus Valley is the westernmost part of the Indo-Gangetic plain; it stretches, parallel to the Himalayas, across the Indo-Pakistan subcontinent. It consists of the upper Punjab plain and the lower Indus Delta. Five rivers: the Indus, Jhelum, Chenab, Ravi and Beas, traverse Punjab to join the Indus River as it enters the Sindh Province. A short July–August monsoon spell causes floods, as heavily silted rivers cannot contain it and soon overflow, flooding the valley. Most of the irrigation canals are glutted and the valley looks like an extensive wetland, with scattered swamps, ponds, and puddles. It is the boom reproductive period for local amphibians. Soon the temperate conditions in the valley dry most of the water bodies, and there is general dearth of water. To cope with the drought period and irrigation problem an extensive canal system has been excavated, which ramifies throughout the valley. Apart from irrigation by canals, artificial means, powered wells etc., are employed during the rain deficient period.

Six species of amphibians are known to inhabit the Indus Valley: *Bufo stomaticus*, *Euphlyctis cyanophlyctis*, *Hoplobatrachus tigerinus*, *Limnonectes limnocharis*, *L. syhadrensis*, and *Tomopterna breviceps*. *Tomopterna breviceps* is a rare species in the plain, with spotty distribution. The rest have wide distribution throughout the valley, some invading deep into valleys of the northern and western highland (Khan, 1982a, 1985, 2000, 2002; Khan and Tasnim, 1987). During monsoons every temporary pond, puddle, etc., is utilized for breeding. Male aggregations of different species are frequent; the croaking is deafening as they share the temporary breeding sites (Khan and Malik, 1987). The tadpoles are entirely aquatic, feeding mostly on aquatic bloom. The larval stage is the most crucial period of a frog’s life, and unfortunately the least understood, selection forces being strong and highly effective at this stage. The delicate, defenseless tadpole is at the mercy of its environment. However, despite their fragility, tadpoles manage to survive, and amphibians continue to thrive against high odds in the aggressive climate of the Indus Valley (Khan, 1991).

I studied Punjab tadpoles extensively (Khan, 1965; 1968, 1969, 1982a,b), extending my observations on their buccopharyngeal anatomy and feeding ecology for my Ph.D. dissertation (Khan, 1991). Detailed study of external morphology of Punjab tadpoles has never been attempted. The present paper, the first in a series reporting on Indus Valley tadpoles, deals with *Bufo stomaticus*.

Materials and methods

Bufo stomaticus tadpoles are best collected from shallow ponds and puddles. Tadpoles at Stage 35 (Khan, 1965) were selected for description of external morphology, since at this stage it has reached its specific configuration, after this stage metamorphic changes start taking place. Terminology used to describe the tadpole follows Altig et al. (1998).

The tadpoles are scooped from marginal water with a tea-pot strainer or are dredged from pond bottom by a hand-net. To separate tadpoles from mud, the hand-net is kept dipped in water; as the tadpoles swim above it they are scooped up. The tadpoles are kept in clear water for some time to wash debris adhering to body. Tadpoles were killed and fixed in Bouin’s Fluid:

Picric acid (saturated aqueous)	75 ml
Formalin (40% aqueous formaldehyde)	25 ml
Glacial acetic acid	5 ml

The fixed tadpoles were stored in dilute Bouin’s 1:1 water. The yellow color imparted by picric acid accentuates external morphological features of the tadpole (Khan, 1965, 1982a).

Tadpoles were identified using the following key from Khan (1982a):

- 1. Oral disc with dark brown keratinized parts-----2
No distinct oral disc with keratinized parts---
----- *Microhyla ornata*
- 2. Cloacal opening median----- *Bufo stomaticus*
Cloacal opening dextral----- 3
- 3. Five rows of teeth on anterior labium---
----- *Hoplobatrachus tigerinus*
One to three rows of teeth on anterior labium-----4
- 4. Three rows of teeth on posterior labium, third small---
----- *Limnonectes limnocharis* and *L. syhadrensis*
Two rows of teeth on posterior labium---
----- *Euphlyctis cyanophlyctis*

Data from at least 10 tadpoles were recorded; all measurements were taken with a vernier caliper; drawings were made using a camera lucida.

Description

The body is ovoid; the tail is rather weak, about twice the

* Address for communication: Muhammad Sharif Khan, 151 S. Bishop Avenue, Apt. A17, Secane, PA 19018, USA. E-mail: typhlops99@hotmail.com.

length of the body, gradually tapering to an obtuse end. The snout is semicircular in dorsal profile. Total length ranges from 17.4 to 17.9 mm. The dorsolateral eyes (vertical diameter 0.63–0.64 mm, horizontal 0.92 mm) are separated by a distance of 1.32 mm. The dorsolateral nostrils are closer to the eye than to the tip of the snout; internarial distance is 0.62–0.64 mm. The sinistral spiracle is closer to the posterior end of the body than to the tip of the snout; it is borne on a tubular spiracle-spout which protrudes from the mid-lateral line of the body. The anal tube is mesoid. The caudal muscle is widest at the base of the tail, gradually tapering toward the tip. Fine, oblique lateral lines indicate tail myotomes close to the base of the tail. The dorsal fin broadest at middle, and extends onto the body dorsum. The ventral fin is narrower and extends parallel below the tail. The fins meet around the tail tip (Figure 1). Tadpoles developing in shallow puddles have abnormally short tails, almost half the normal length, with shorter, broader, fins.

The tail-piece (part of ventral fin from body to cloacal tube) is well developed at Stage 35. The hind limb has a short broad thigh, tarso-metatarsus, and five toes, of which the fourth is typically the longest. There is no indication of webbing between the toes.

Color: Tadpoles are almost black when they emerge from the egg; they swarm in schools along the edges of ponds. At this stage the tadpole is distasteful; as it advances in age, its color changes to light gray and it becomes palatable, agile and secretive. The tadpole becomes aggressive, and distances itself from its siblings to avoid attacks. Formerly a total vegetarian, it becomes an opportune carnivore. At Stage 35 the tadpole is solitary; when disturbed it is quick to escape into deep water.

Tadpoles inhabiting ponds with little vegetation remain light brown in color; however, those developing in ponds with profuse vegetation are spotted with black, so are effectively camouflaged.

Oral disc: The well-developed oral disc (Figure 2) is a part of the ventral profile of the body, with narrower pre-oral and broader post-oral labia. The labia converge inward laterally where they are free to form labial palps; their margin is produced into delicate filiform papillae.

The pre-oral labium has two tooth rows: the outer extends from side to side, while the inner is widely interrupted mesially; three complete tooth rows are on the posterior labium. The dental formula of *Bufo stomaticus* is 2(2)/3.

The dark brown, tiny teeth are keratinized structures, arranged in transverse regular rows, ranging 0.04–0.06 mm in length. The tooth base is a thick cylinder, fixed in a pad of

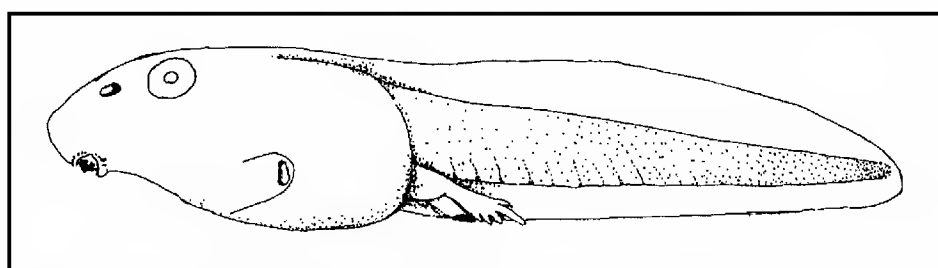


Figure 1. *Bufo stomaticus* tadpole, external morphology.

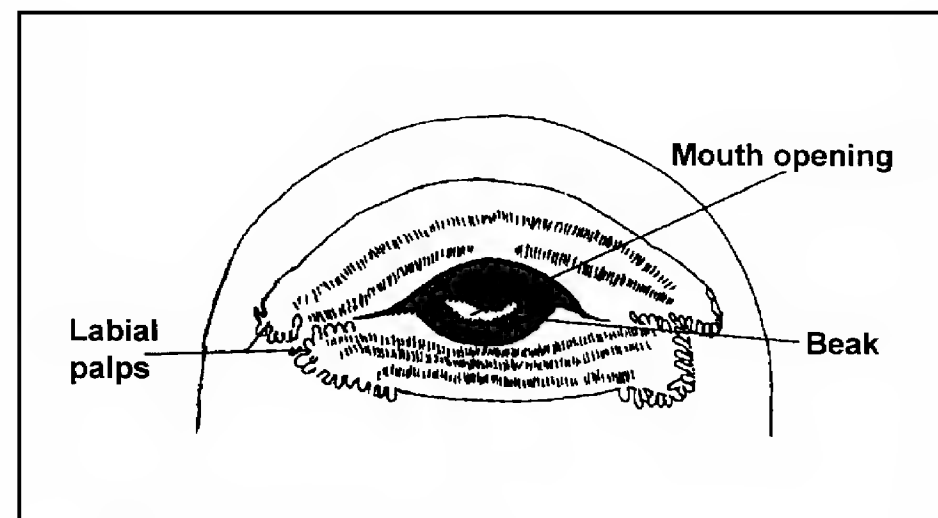


Figure 2. *Bufo stomaticus* oral disc.

tissue; distally the tooth is flattened, spatulate, orally concave. It is laterally cuspidate with 5–6 sharp cusps (Figure 3). Keratinized, dark brown, narrow jaw sheaths form the beak. The pre-oral or upper beak is long, narrow, bow-shaped and edged with sharp serrations. It is cuspidate, round in the middle, and bends out laterally. The posterior sheath is broader, and edged with sharp serrations overlapped by pre-oral sheath (Figure 2).

The labia move freely during feeding. The papillated part of the labial rim is firmly fixed at the surface on which the tadpole is feeding. Rows of teeth are brought into rasping action, by contracting-expanding labials muscles, play against vegetation surface, shearing and shredding, the sharp beak rendering large chunks into small pieces.

Primarily the tadpole is a voracious herbivore; however, it starts supplementing its diet with protein at Stage 35 by devouring its siblings and other tadpoles and bodies of drowned animals (Khan, 1991).

Natural history notes

Bufo stomaticus is the common toad of the Indus floodplain. It extends to about 2000 m in the northern and western mountain foothills (Khan, 1972). It tolerates varying climatic conditions and is especially common in dry semidesert areas (Auffenberg and Rehman, 1997). It is essentially nocturnal; however, during breeding season its activity is mostly diurnal. It emerges at sunset from holes and crevices among stones or brick walls, and roams about widely in vegetation throughout the night, feeding on insects and worms. It is often attracted to light-posts, running and chasing insects as they fall. It ventures freely into inhabited houses, hiding under household articles, occasionally emerging to catch houseflies and roaches. In

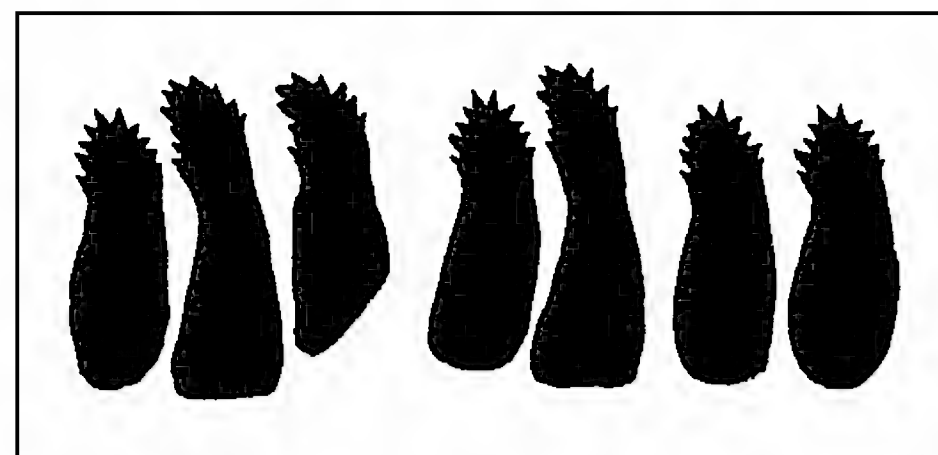


Figure 3. *Bufo stomaticus* tooth morphology.



Figure 4. *Bufo stomaticus* “ball” —reproductively active males surround an amplexant pair.



Figure 5. An adult female *Bufo stomaticus*.

drought conditions the toads aggregate in damp places, especially around pumps, to catch splashed water drops on their bodies. The toads squat, pressing their hindquarters against the damp soil to absorb moisture through the skin.

Young toads (snout–vent length 30–40 mm) often climb over the 1.5–2 m high compound walls around houses, taking advantage of irregularities between the bricks.

A summer evening temperature of 13°C, a downpour, noise of flowing water and increased humidity are sufficient elements to trigger breeding activity in the toad (Khan and Malik, 1987). *Bufo* males are first to arrive at the water-catching low lying areas where rainwater is accumulating. They form noisy choruses of guttural notes, “cree, cree, cree, cree, cree” repeated several times. They are very aggressive, fighting each other vigorously, kicking, tugging jumping over each other, in an effort to form pairs. A male will avoid being clasped by another male by vigorously pushing him away, at the same time trying to get a hold on the assailant. However, a female is docile in response to such an attempt; it readily allows a male to get an axillary clasp on its body. The amplexic pair is jumped upon by several suitors, struggling to dislodge the amplexic male. A “ball” of struggling and pushing males is soon formed round the pair, which remains floating for some time (Figure 4). Somehow the female manages to escape with its riding mate to a calm part of the pond to lay eggs. The eggs are strung in a double row in a gelatinous string, which is wound around submerged vegetation (Khan, 1965, 1982b).

Mortality: Road mortality is high in toads. They are crushed under passing traffic as they pursue insects beneath roadside light-posts. Crows and other local birds feast on their exposed viscera (Khan, 1982a, 1990). Moreover, toads are included in the diet of several sympatric animals: *Hoplobatrachus tigeri-*

nus (its carnivorous tadpole devours sympatric *Bufo* tadpoles, while toadlets fall prey to adults); *Varanus bengalensis*; *V. griseus*; *Ptyas mucosus*; *Amphiesma stolata*; *Xenochrophis piscator*; *Bungarus caeruleus*; and *Echis carinatus*. The toad escapes into a burrow or fissure to avoid potential predators; however, if no hiding place is available, it is quick to bury itself in loose soil (Khan and Tasnim, 1992). There is high mortality in recently metamorphosed toadlets, as they fall prey to herons, ducks, sympatric amphibians and hosts of local snakes as they emerge from water. Moreover, as the toad usually breeds in roadside ponds and puddles, many toadlets succumb to traffic as they emerge and scramble about seeking refuge; few manage to reach the safety of surrounding vegetation.

Mortality is greatest during the tadpole stage. Being an opportunistic breeder, *B. stomaticus* breeds in every water body, large or small, most of which soon are dried due to high temperatures, destroying the tadpoles (Khan and Malik, 1987). However, in rare rainier years, intermittent rains keep filling the sites, so that tadpoles metamorphose successfully.

About 80% of Pakistan’s agricultural activity occurs in the fertile Indus Valley. The cash crops are regularly sprayed with insecticides. The washout received by the surrounding water bodies may kill the tadpoles, while the affected insects may poison the adult toads that ingest them.

Distribution: The worldwide success of the genus *Bufo* is mostly attributed to its small, simple generalized tadpole, which requires little water for normal development and simple diet (Khan, 1991).

Bufo stomaticus is widely distributed throughout the Indo-Pakistan subcontinent, from Bangladesh through the Ganges Plain, peninsular India, Sri Lanka, Pakistan, Afghanistan, Iran, and reaches to Muscat.

Literature Cited

- Altig, R., R. W. McDiarmid, K. A. Nichols and C. P. Ustach. 1998. A key to the anuran tadpoles of the United States and Canada. Contemporary Herpetology Information Series (An Online Journal) Number 2.
- Auffenberg, W., and H. Rehman. 1997. Geographic variations in *Bufo stomaticus*, with remarks on *Bufo olivaceus*: Biogeographical and systematic implications. Pp. 351-372. In: S. A. Mufti, C. A. Woods and S. A. Hasan, editors, Biodiversity of Pakistan. Pakistan. Mus. Nat. Hist. Islamabad.

- Khan, M. S. 1965. A normal table of *Bufo melanostictus* Schneider (*Bufo stomaticus* Lütken). *Biologia* (Lahore) 11:1-39.
- . 1968. Morphogenesis of digestive tract of *Bufo stomaticus*. *Pakistan J. Scient. Res.* 20:93-106.
- . 1969. A normal table of *Rana tigerina* Daudin. 1. Early development (Stages 1-27). *Pakistan J. Sci.* 21:36-50.
- . 1972. The “commonest toad” of West Pakistan and a note on *Bufo melanostictus* Schneider. *Biologia* (Lahore) 18:131-133.
- . 1982a. Key for the identification of amphibian tadpoles from the plains of Pakistan. *Pakistan J. Zool.* 14:133-145.
- . 1982b. Collection, preservation and identification of amphibian eggs from the plains of Pakistan. *Pakistan J. Zool.* 14: 241-243.
- . 1985. An interesting collection of amphibians and reptiles from Cholistan Desert, Punjab, Pakistan. *J. Bombay. Nat. Hist. Soc.* 82:144-148.
- . 1990. The impact of human activities on the status and distribution of amphibians in Pakistan. *Hamadryad* 15:21-24.
- . 1991. Morphoanatomical specialization of the buccopharyngeal region of the anuran larvae and its bearing on the mode of larval feeding. Ph.D. diss., University of the Punjab, Lahore, Pakistan.
- . 2000. *Sar Zameen-a-Pakistan kay maindak aur Khazinday* (Frogs and lizards of Pakistan). Urdu Science Board, 299 Upper Mall, Lahore, Pakistan.
- . 2002. A checklist and key to the Amphibia of Pakistan. *Bull. Chicago Herp. Soc.* 37(9):158-163.
- Khan, M. S., and S. A. Malik. 1987. Reproductive strategies in a subtropical anuran population in arid Punjab, Pakistan. *Biologia* 33:279-303.
- Khan, M. S., and R. Tasnim. 1987. A field guide to the identification of herps of Pakistan. Part I, Amphibia. Biological Society of Pakistan, Monograph No. 14:1-28.
- Khan, M. S., and R. Tasnim. 1992. On a strange escape behavior shown by common Pakistani toad *Bufo stomaticus* to an ophidian predator. *The Snake* 24:74-76.

HerPET-POURRI

by Ellin Beltz

E-mail, we get E-mail

- “I know it’s not a herp, but it’s just too cute. <<http://www.georgehart.com/trilobites/trilobite.html>> Check out the photos of the trilobite cookies and the recipe.” [from Eloise Beltz-Decker]
- “The footage shows how (almost) *all* species of snakes mate, but it is a huge file (29 mb) and can only therefore be downloaded and viewed . . . by those with high-speed cable or broadband internet access . . . and RealPlayer or . . . similar. . . .” <<http://www.smuggled.com/Adders1.avi>>. Raymond Hoser [November 27, 2002]
- “We’ve relaunched our website . . . Project Exploration <<http://www.projectexploration.org>> and . . . the PE Store <<http://store.yahoo.com/projectexploration-store/>>! [We] reorganized to put more emphasis on kids’ work, materials for teachers, and to allow us to bring new projects to light more quickly . . . [or] send an online postcard of your favorite expedition photo: <<http://www.projectexploration.org/cgi-bin/gallery/imageFolio.cgi>>. . . . We are reaching more than 50,000 people a month in more than 14 countries around the world. If you have suggestions about the site send them to us!” Gabrielle Lyon, Project Exploration. Using the wonders of science to inspire city kids and girls. [November 25, 2002]
- I assume because of my website, <<http://ebeltz.net/herps/etyhome.html>> translations of the names of reptiles and amphibians, someone E-mailed me to ask what the ad in Latin for Harry Potter 2 means: “Draco dormiens nunquam titillandus.” As close as I can tell, it means “Never tickle a sleeping dragon.” I’d add an addendum “Draco Komodoensis nunquam titillandus” since those guys are just about as hungry asleep or awake.

Large Tetrapods

- Beaverton, Oregon, recently passed an exotic animal law and alligators were included. So a 4½-foot-long alligator was removed from a home in the suburb of Portland. He had first caught the city’s attention after complaints from the neighbors who had seen it walking around outside of the owner’s backyard last August. The ‘gator was purchased four years ago when it was six inches long. The woman who owns him said, “she will fight the city’s code to keep Al swimming in his black plastic tub in her kitchen.” [The Oregonian, November 27, 2002]
- Ashtabula Police incarcerated six adults charged with various narcotics violations and seized the alligator that lived in the basement. “[One of the officers] made like a lasso and got it around her snout, then tightened it up,” [the other officer] said. “Then, he picked up the alligator and we put her into one of those big plastic containers like you can buy at Big Lots. We put the lid on really quick. She was not happy. She was thrashing around pretty good. They say an alligator’s tail is very strong. She was whipping hers around quite a bit.” The town has an exotic animal law prohibiting possession within town limits. The department has contacted zoos and a

wildlife showman trying to give away the alligator. [Ashtabula Star-Beacon, November 26, 2002]

- “Northern Territory police will issue a summons to a tour guide over a fatal crocodile attack of a German tourist at Kakadu National Park last month. [The 25-year-old] was taken by the reptile while swimming with members of the tour group at the Sandy Billabong. Police commander . . . says he received formal advice from the Director of Public Prosecutions to charge the guide. A police spokeswoman says the man will be summonsed to appear in the Darwin Magistrates Court at the earliest opportunity.” [ABC Australia, November 27, 2002]
- “The Sultanate has joined other Asian countries to fight the alarming depletion of turtle populations in the region. They include three giant species found on Brunei shores. At least 17 species of freshwater turtles and tortoises are at risk. Many Asian nations expressed concern over the population depletion at an alarming rate. Among them are the Malaysian giant turtle (*Orlitia borneensis*), giant Asian pond turtle (*Heosemys grandis*) and spiny turtle (*Heosemys spinosa*). If not immediately controlled, these species could face imminent extinction.” [Brunei Darussalam Bulletin, November 19, 2002]

New urban legends

- The Johannesburg, South Africa, *Sunday Times* reports that a “tale of killer snake is hard to swallow.” The news made the world wire when a 12-year-old boy claimed to have watched a large python crush and swallow another boy. A snake expert believed the story and found trails and tracks in the area which seemed further collaboration, but the police say no one has come forward to report a missing child. As the police pointed out, no body or no report means no case. [September 24, 2002]
- “A bandit wielded a rather unusual weapon to rob a man, a snake. The snake, a *macajuel* [= boa constrictor], scared the wits out of the victim who was forced to hand over to the bandit his watch valued at \$450.” [Newsday, Port of Spain, Trinidad and Tobago, November 18, 2002]

I love the smell of herpetology in the morning!

- The Johannesburg, South Africa, *News* reports that an animal once believed to be only a legend, “The Giant Swimming Turtle of Vietnam” has actually been discovered swimming around in Hoan Kiem Lake in the middle of the capital, Hanoi. “Professor Duc has named the turtle in the lake *Rafetus leloii* after King Le Loi, the founder of Thanh Long, the 1,000-year-old city that became Hanoi. The legend of the Hoan Kiem turtle has been around for nearly as long. As the story goes, after Le Loi defeated Chinese invaders using a magical sword sent by the gods, he enjoyed a leisurely jaunt on the lake. A giant golden turtle appeared from the depths and surfaced near the king’s boat. The regal sword began to vibrate, and the turtle spoke instructing the king to return the weapon to its heavenly owners. The sword flew out of the king’s belt and into the turtle’s mouth, and the golden tortoise

submerged. For centuries, the lake has been known as Hoan Kiem, ‘The Lake of the Restored Sword.’ Fast forward 1,000 years and it is still possible to see what may be the largest and rarest freshwater turtle in the world. It is seen only once or twice a month. How long the turtle will remain there is uncertain, though. Professor Duc first spotted the giant reptile — which is notoriously shy and can stay underwater for days at a time — a decade ago and has been studying it ever since.” There seems to be only one left. [November 26, 2002]

- In addition to the above, Vietnam is now home to five species of sea turtle with the sightings of *Chelonia mydas* nesting on a beach midway up the coast. The other four are *Eretmochelys imbricata*, *Lepidochelys olivacea*, *Caretta caretta* and *Dermochelys coriacea*. They hang out here because, as the article points out in its original French, “Outre ces espèces animales rares, comme les tortues de mer et les dugongs, l’écosystème de la zone maritime de la province de Kiên Giang s’avère très riche, avec ses coraux, ses algues et ses fruits de mer.” [Le Courrier du Vietnam, Hanoi, October 10, 2002]

The invasion will be telecast

“It’s almost high noon at Fogg Dam. Some time this summer, the first wave of invading cane toads is expected to descend upon the unsuspecting snakes that have long inhabited the former rice fields dotting the Adelaide River, 50 kilometers east of Darwin. But this time many of the opposing combatants — toads on one side and native snakes on the other — will be wearing tiny radio transmitters that will allow scientists to monitor the front line of the battle. Yesterday the Australian Research Council awarded a five-year \$925,000 grant to . . . evolutionary biologists at the University of Sydney, to study the ecological and evolutionary impact of a cane toad invasion.” The local snakes eat the toxic toads and die. The toads have been implicated in local extinctions of native fauna wherever they occur in Australia. [Sydney Morning Herald, October 3, 2002]

So where’s the comet?

- “A new study finds that humans have modified or influenced 83% of the Earth’s land surface leaving just a few areas pristine for wildlife . . . [and] 98% of areas suitable for growing crops . . . with the primary remaining wild areas composed of the northern forests of Alaska, Canada and Russia; the high plateaus of Tibet and Mongolia; and much of the Amazon River Basin.” The map of human influences is at <<http://www.wcs.org/humanfootprint>>. [Reuters, October 23, 2001, via GreenLines, November 1, 2002]
- “A new study in *Science* . . . finds that the number of plants worldwide . . . threatened with extinction is much larger than commonly believed, and could be as high as 47% if tropical species are included. . . .” [GreenLines, November 4, 2002]

California Amphibians

- “California’s Sonoma County has decided to require an environmental impact study before any development or digging within a mile and a half of known breeding sites of the endangered tiger salamander. . . .” [GreenLines, November 4, 2002]

- “Research published in the journal *Conservation Biology* has implicated wind-blown farm chemicals in the decline of three more species of imperiled California frogs, the mountain and foothill yellow-legged frogs and the Cascades frog. . . . Previous research had found the pesticides linked to the decline of the endangered red-legged frog and the new study bolsters a Center for Biological Diversity lawsuit that charges the EPA with ignoring the Endangered Species Act by allowing certain pesticides to remain on the market even though they are known to kill or deform the red-legged frog. The windborne pesticides were linked to population drops for all for frogs and found that habitat where the frogs had been extirpated had up to four times more agricultural use than areas where the four species are still found.” [GreenLines, November 27, 2002]

New American Vertebrate

“A new species of snake, Slowinski’s Corn Snake, has been discovered in north-central Louisiana and eastern Texas by Dr. Frank T. Burbrink, a professor at the College of Staten Island-CUNY. . . . [He named it] *Elaphe slowinskii*, in memory of the late Dr. Joseph B. Slowinski, who was curator of herpetology at the California Academy of Sciences in San Francisco, and a close friend and colleague of Dr. Burbrink’s. Dr. Slowinski was bitten by a venomous krait in Burma on September 11, 2001, and died the next day. Published in . . . the forthcoming December 1, 2002, issue of *Molecular Phylogenetics and Evolution* (Volume 25, Number 3), the new species is most closely related to the eastern corn snake (*Elaphe guttata*), found east of the Mississippi River in the southeastern U.S., and to the Great Plains rat snake (*Elaphe emoryi*), found on the Great Plains from Texas north to Utah and Nebraska. A color image by noted wildlife photographer Suzanne L. Collins of an adult Slowinski’s corn snake from Natchitoches Parish, Louisiana, can be viewed at <<http://www.cnah.org/detail.asp?id=1235>>.” [Center for North American Herpetology, November 23, 2002 <<http://www.cnah.org>>]

As below, so above

- A 26-year-old Australian has been charged because he did not have a Reptile Keepers License but was keeping a large number of protected and exotic reptiles in his home including a boa constrictor (exotic to Australia = *), three diamond pythons, two albino Corn snakes (*), 16 eastern water dragons (native lizards), one deceased eastern water dragon, three Cunningham’s skinks, four eastern longneck turtles, one milk-snake (*), and one deceased freshwater crocodile. The two dead animals were in the man’s freezer. He could be fined \$11,000 Australian, or kept six months in prison if convicted. [News release, October 30, 2002, from <<http://www.npws.nsw.gov.au/cgi-bin/mediarelease.pl?data=021030b.mr>> forwarded by Raymond Hoser]
- In Fruithurst, Alabama, officials seized a pair of illegal venomous snakes, an African puff adder viper and a rattlesnake, from the home of a man who reportedly sold his snakes at shows and over the Internet. [Birmingham News, Alabama, November 20, 2002]
- “Snakes are likely to be seen in residential areas as a result

of the dry conditions. . . . Rather than kill a snake that's coming too close to home for comfort, people should consider calling a snake catcher who will catch and remove it to a place that's safe for everyone. . . . The most common snakes in the Eurobodalla are red-bellied blacks, tiger snakes and brown snakes and they've been seen and caught in many residential areas over the years." [Batesmans Bay, Australia *Bay Post-Star*, September 19, 2002]

- "Hot, dry weather has brought some very unwelcome visitors to area homes — creatures usually avoided in the wild and not at all welcome under one's refrigerator or sink — snakes. Corn, black rat, hognose, copperhead and other varieties of snakes inhabit the central North Carolina area. . . . The first impulse of many finding a snake in their home is to call for help from some local government agency. . . . Unfortunately, it is not the responsibility of any of these agencies to remove snakes, poisonous or otherwise, from people's homes. . . . So, residents are basically on their own when it comes to dealing with the slithering, silent invaders. The good news is, of the various varieties of snakes likely to wander into homes, only one is poisonous: the copperhead." [Sanford, North Carolina *Herald*, September 18, 2002]

- "An Australian man has escaped with his life after being bitten by the world's third most venomous snake — known as the 'taipan.' He was fortunate as the incident took place at a farm where Australia's snakes are kept to produce anti-venom." [Singapore *Channel News Asia*, September 19, 2002, from Desiree Wong]

- "A [38-year-old] Pascagoula, Mississippi, man's love for his pet rattlesnake has landed him in critical condition after being bitten. . . . [He] is on life support . . . given 27 vials of anti-venom while in a stationary, paralytic state and had only 15 percent of his respiratory system functioning according to his mother. . . . [He was] bitten three or four times on his wrist and arm by his 3-year-old, 5½-foot-long eastern diamondback rattler . . . when he was removing the snake to clean its . . . cage." [Mississippi *Press*, September 11, 2002]

Swiss Snake

"A snake-lover has been reunited with his boa constrictor two days after he left it on a bus in the Swiss capital, police said Wednesday. The . . . owner . . . said he was carrying several bags and failed to notice the snake's escape from one of them. Surprised passengers discovered the 3-foot snake curled up behind a bus seat Monday night, police said. Veterinary authorities called in to capture the boa said it was not dangerous. Police said that after media reports about the capture, three other people also came forward claiming to have lost the boa." [Associated Press, September 18, 2002]

He needed killin'?

"An American alligator that was living in a farm pond in McClain County, Oklahoma, was shot and killed Thursday night by federal wildlife authorities. . . . [The] state director of wildlife services for the United States Department of Agriculture, said the alligator was killed after attempts to trap it for two months failed. It was obvious that others have tried to

trap the alligator before, he said. Baited traps were unsuccessful and officials then tried to catch the alligator by spotlighting with a snare pole, [he] said. 'It had seen that before as well. . . . It was impossible to catch.' The alligator measured 7 feet, 4 inches, and weighed more than 100 pounds." [The Oklahoman, September 21, 2002]

Hemisphere extension

"A Mount Maunganui florist got the fright of his life when he saw a live 25 centimeter snake on the floor of his shop on Friday. He attacked the snake with a broom, smashing its head and cutting it into three pieces before calling Agriculture and Forestry Ministry staff." It turned out to be an American ringneck snake and probably arrived on "imported foliage." [New Zealand *Stuff*, November 20, 2002]

Got to rescue him, here

"Steve Irwin's latest target is much smaller and potentially more dangerous. The crocodile hunter with the cult following has been signed by the Federal Government to promote Australia's tough quarantine laws. Irwin will star in a \$3.5 million advertising campaign to highlight the huge dangers posed to Australian wildlife and agriculture by apparently harmless illegal imports. His message will be that working with crocodiles is a lot less risky than bringing banned foodstuffs and other products into Australia." [Australia *Sunday Mail*, November 24, 2002]

But what about reptile dysfunction?

London (Reuters): "Viagra, the anti-impotence drug that has pepped up the sex lives of humans, may also help to save endangered animal species, but not in the way most people would imagine. Conservationists say the popularity of Pfizer's blockbuster drug could reduce demand for animal parts used in traditional Chinese medicines to treat impotence. . . . Viagra is cheaper than some Chinese sex potions and its effectiveness has been demonstrated. . . . The drug could also have an impact on green turtles, geckos and sea horses which are used in Chinese remedies for erectile dysfunction." [The Times of India, New Delhi, November 18, 2002.]

Please send more clippings! Great thanks to Wes von Papineau for his electronic world roundup without which you would have very little to read this time. Next month, if I can get a computer and a phone line to send it, I will send you my column from Australia where Ken and I will be visiting friends on both the western and eastern sides. Please keep sending clippings! I will have to do a column immediately when I return, too. Send whole pages of newspaper with your name on each piece to: Ellin Beltz, P.O. Box 934, Ferndale, CA 95536-0934. Besides, we have to keep creeping out the local post office. One of the *Bulletins* I received was considered such fine art at some point of its journey that it was placed in a ziplock bag and delivered like that. I can only assume the postal workers did not even want to touch the snake illustrated on the envelope. Marty Marcus' envelopes showing him helping kids pet giant reptiles have also excited comment. Remember, they're holding my mail for a month while I'm gone. Let's send them an eyeful! :) eb

Herpetology 2002

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

TREE-HOLE FROG CALLS

B. Lardner and M. bin Lakim [2002, Nature 420:475] note that animal mating calls that exert a comparatively high sound pressure propagate over greater distances and generally have greater attractive power. Their study shows that calling male Bornean tree-hole frogs (*Metaphrynella sundana*) actively exploit the acoustic properties of cavities in tree trunks that are partially filled with water and which are primarily used as egg-deposition sites. By tuning their vocalizations to the resonant frequency of the hole, which varies with the amount of water that it contains, these frogs enhance their chances of attracting females. In their experiment, the authors placed a calling male in an opaque plastic tube that was partially filled with water. The frog's vocalizations were recorded the following night as the water level was slowly reduced over a period of 28 min. At regular intervals they measured the change in air-column depth, and later sampled corresponding time segments from the recording. The frog's call is a simple tonal pulse with the fundamental frequency dominant. Resonance was predicted to occur at an air-column depth of one-quarter of the wavelength of the current pitch. Both sound pressure and pulse duration of the call peaked when the resonance effect was strongest. Also, the interval between call pulses was shortest when the sound pressure peaked. The frog managed to track closely the falling water level in its resonance-matching over a period of several minutes, gradually lowering its pitch by about 115 Hz. Although this result relates to only one individual, the most likely explanation for this striking pattern is that the frog was actively tracking the resonant frequency of the tube. The authors believe that this is the first evidence of an animal not only sampling resonance properties but also facultatively adjusting its call pitch and calling strategy in what seems to be an adaptive manner.

SUCTION FEEDING BY A TINY TADPOLE

S. M. Deban and W. M. Olson [2002, Nature 420:41-42] report that pipid tadpoles of the African genus *Hymenochirus* are not only among the smallest free-swimming, feeding vertebrates but are also predatory suction feeders. Tadpoles of most frog species are suspension-feeding detritivores that use scraping mouthparts to create the suspension. *Hymenochirus* tadpoles, however are morphologically divergent—they lack a filter apparatus and scraping mouthparts, and have huge, frontally orientated eyes. Also, they are obligate air breathers and do not pulse-pump to irrigate the gills like most other tadpoles. The authors used a high-speed video system to study details of the feeding mechanics of *Hymenochirus boettgeri* tadpoles and found that they first track individual prey organisms visually, and chase and then capture them by mouth using suction. This feeding mechanism is unique among frogs and is strikingly convergent with that used by teleost fishes.

TADPOLE POPULATION ESTIMATES

R. E. Jung et al. [2002, J. Herpetology 36(3):465-472] counted, estimated, and censused Couch's spadefoot (*Scaphiopus couchii*) and canyon treefrog (*Hyla arenicolor*) tadpole populations in Big Bend National Park, Texas. They used visual (VI) and dip net indices (DI) and double-observer (DOE), removal (RE), and neutral red dye capture-recapture (CRE) estimates. Initial dye experiments helped them determine appropriate dye concentrations and exposure times to use in mesocosm and field trials. The mesocosm study revealed higher tadpole detection rates, more accurate population estimates, and lower coefficients of variation among pools compared to those from the field study. In both mesocosm and field studies, CRE was the best method for estimating tadpole populations, followed by DOE and RE. In the field, RE, DI, and VI often underestimated populations in pools with higher tadpole numbers. DI improved with increased sampling. Larger pools supported larger tadpole populations, and tadpole detection rates in general decreased with increasing pool volume and surface area. Hence, pool size influenced bias in tadpole sampling. Across all techniques, tadpole detection rates differed among pools, indicating that sampling bias was inherent and techniques did not consistently sample the same proportion of tadpoles in each pool. Estimating bias (i.e., calculating detection rates) therefore was essential in assessing tadpole abundance. Unlike VI and DOE, DI, RE and CRE could be used in turbid waters in which tadpoles are not visible. The tadpole population estimates used accommodated differences in detection probabilities in simple desert pool environments but may not work in more complex habitats.

NATURAL HISTORY OF TWO COLUBRIDS

K. Tanaka and H. Ota [2002, Amphibia-Reptilia 23(3): 323-331] surveyed the natural history of two diurnal colubrid snakes, *Elaphe quadrivirgata* and *Rhabdophis tigrinus*, on Yakushima Island, Japan. Two color morphs, normal striped and melanistic, were observed in *E. quadrivirgata*, and the frequency of the latter morph was significantly greater in 1998 (83.3%) than in 1981 (56.4%). Regurgitated stomach contents of *E. quadrivirgata* consisted solely of reptilian prey, and the skink *Eumeces latiscutatus* was by far the most frequent prey item. This result makes a sharp contrast to those of previous studies dealing with populations of this species in central and northern Japan, where the snake preys mainly on anurans. On the other hand, examination of stomachs of *R. tigrinus* yielded only anuran prey. In *Elaphe quadrivirgata*, both snout-vent length and body mass in the Yakushima population were smaller than those in a population from central Japan, whereas the size variables for the Yakushima population appeared greater than those in the central Japanese population in *R. tigrinus*. Body temperature was significantly higher in *E. quadrivirgata* than in *R. tigrinus*.

TAIL LOSS AFFECTS SKINK'S LITTER SIZE

D. G. Chapple et al. [2002, J. Herpetology 36(3):480-486] investigated the effect of caudal autotomy on reproductive investment in females of a viviparous skink, *Niveoscincus metallicus*. The object was to examine the relative importance of lipid depletion and energetic diversion to this activity. Although abdominal fat bodies are present, this species stores most of its energetic reserves in the tail. Since caudal fat is preferentially aggregated toward the base of the tail, autotomy and lipid depletion may be mutually exclusive events. Reproductive consequences following tail loss associated with significant loss of caudal fat were compared with those following autotomy involving no fat loss in two groups of females: females that had lost their tail during their most recent vitellogenic period; and females in which tail loss had occurred in a previous reproductive season. Caudal autotomy during vitellogenesis resulted in a significant reduction in litter size, irrespective of the position of tail loss, suggesting that smaller litters were a consequence of the diversion of energetic resources from reproduction to tail regeneration, rather than the loss of fat reserves per se. However, offspring from mothers that experienced tail loss during vitellogenesis without associated loss of fat reserves were significantly larger in size (snout-vent length and mass) and had longer tails than those from any other group. The authors suggest that this was probably achieved through facultative placental transfer during gestation, although the possibility that more yolk was allocated to each egg cannot be discounted. Sprint speed and the size of abdominal fat reserves at birth and postnatal growth were not correlated with either recency of autotomy or the location of the tail break.

FEMINIZATION OF MALE FROGS IN THE WILD

T. Hayes et al. [2002, Nature 419:895-896] note that atrazine is the most commonly used herbicide in the United States and probably in the world. Leopard frogs (*Rana pipiens*) were sampled from eight different sites in a transect from Utah to Iowa. Records of atrazine sales were used to identify potentially contaminated sites. All sites associated with atrazine sales exceeding 0.4 kg/km² and with water-borne atrazine contamination above 0.2 p.p.b. were found to contain males with testicular oocytes. These abnormalities were of similar morphology to those induced by atrazine in the same species in the laboratory. This hermaphroditism was not evident in the absence of atrazine exposure. The authors conclude that atrazine is responsible for these effects in wild populations, even though other contaminants may be present that could produce similar effects.

Applied to crop fields as a pre-emergent, atrazine contamination in water sources peaks with spring rains, which also coincide with breeding activity in many amphibians. Given the adverse effects of atrazine on the gonads of male frogs, this pattern of atrazine application may increase its impact on amphibian populations. In the light of growing evidence that these populations are in decline, the contribution of atrazine to this decline warrants further investigation.

CAUDAL LURING IN LATASTE'S VIPER

X. Parellada and X. Santos [2002, Amphibia-Reptilia 23(3):343-347] note that caudal luring is a feeding tactic used by snakes that consists of the movement of the distal portion of the tail, usually conspicuously colored and resembling a vermiform invertebrate. The authors observed tail luring twice in an adult female Lataste's viper, *Vipera latasti*, during a radio-tracking study conducted in the Garraf Mountains (Catalonia, Spain, northeastern Iberian Peninsula). Also, captive *V. latasti* at the Barcelona Zoo and at the Centre de Recuperació d'Amfibis i Rèptils de Catalunya (CPARC) were exposed to prey in order to observe their foraging behavior. At the CPARC facility a young *V. latasti* was seen to display caudal luring for about two minutes in the presence of a Moorish gecko, *Tarentola mauritanica*. Both the adult and juvenile Lataste's vipers performing caudal luring had conspicuous black tail tips. Each was coiled with the erected tail behind the head and the black tail tip undulating. Although young *V. latasti* are known to feed on lizards, adults mainly prey on small mammals. The authors speculate that the luring seen in the free-ranging adult female may have been directed at amphibian prey. They also suggest that the scarcity of reports of caudal luring in captive specimens of the genus *Vipera* could be due to the absence of stimuli that promote this behavior, since mice are the usual prey items offered to captive specimens.

HERMANN'S TORTOISE IN NORTHERN ITALY

S. Mazzotti et al. [2002, Amphibia-Reptilia 23(3):305-312] studied a population of Hermann's tortoises, *Testudo hermanni*, in the "Bosco della Mesola" nature reserve, located within the delta of the River Po, in northeastern Italy. They describe the behavioral adaptations of this population to the climate of a northern sector of this tortoise's range, and to a wooded biotope that is uncommon for the species. Activity, home range, and thermal relations throughout the daily and yearly cycles are described. In contrast to other populations that have bimodal activity peaking in spring and in autumn, the tortoises in the study area had unimodal seasonal activity that can be related to lower summer temperatures. Home range size, 7.4 ha for females and 4.6 ha for males in the study area, was from three to seven times larger than that of all other populations. The large home range, and the low population density of the tortoises in the study area, may be due to food scarcity in the wooded habitat.

Unofficial Minutes of the CHS Board Meeting, November 15, 2002

Jack Schoenfelder called the meeting to order at 7:35 P.M. Board members Dan Bavirsha, Greg Brim, Darin Croft and Emily Forcade were absent.

Officers' Reports

Recording Secretary: Emily was absent so the minutes were not read.

Treasurer: Jim Hoffman reported in place of Greg Brim. The expenses for the massasauga project are being tracked but have not yet been finalized. The fee for blood-work on unwanted crocodilians to be relocated to a Florida facility has been spent.

Membership Secretary: New flyers/application forms will be printed soon.

Vice-president: Lori King reported that Darrell Senneke will talk specifically about the Asian turtle confiscation and the role of the Turtle Survival Alliance, and what's taken place since then with the turtles. John Brueggen will talk in January on Interesting crocodilian behaviors that have been witnessed and documented at St. Augustine Alligator Farm.

Corresponding Secretary: Steve Sullivan reported that our meetings were advertised in the latest issue of the Academy's member newsletter, "Of Notebaert."

Standing Committees

ReptileFest: The next ReptileFest will be the 10th. An article about this anniversary appeared in *Reptiles* magazine.

Grants: Proposals for grants are coming in. Project Exploration has sent us \$500 earmarked for the grants program in thanks for our efforts at the SuperCroc opening at the Museum of Science and Industry.

Shows: Members' night at the Nature Museum is coming up on December 15. We have been asked to participate.

Raffle: Anyone who wants to help run the raffle, please contact a board member. The Society needs you!

Library: The entire library will be on display at the general meetings. Members may check out books. If you have books you would like to donate, see Steve Sullivan.

Adoptions: Want an iguana? There are some other cool animals too. Contact Linda Malawy.

Ad Hoc Committees

Massasauga conservation: Support massasauga conservation! Buy the cool massasauga T-shirts! 100% of profits go to the cause. John Archer volunteered to track the inventory and process mail orders.

CAS temporary exhibit: The CAS has put this project on hold for now. Thanks to all that have participated, especially Gary Fogel. The CHS's work was noted by the CAS even though there isn't an exhibit yet.

Salamander Safari: Salamander Safari will begin at 9:00 A.M. on March 29, 2003, at the Plum Creek Nature Center in Will County. If you would like to bring live amphibians to show, please contact Ron Humbert.

Speakers Bureau: Do you like to talk about herps? Then join the speakers' bureau! Write an abstract about your presentation and give it to Mike Redmer. Make sure to tell him what audiences your presentation is appropriate for and any technical requirements. A list of available speakers will be published on our website.

New Business

Ron moved that the CHS donate \$200 to support the Declining Amphibian Populations Task Force. Lori seconded and the motion passed unanimously.

The meeting was adjourned at 9:38 P.M.

Respectfully submitted by Corresponding Secretary Steve Sullivan



**THE
GOURMET
RODENT,
INC.™**



RATS AND MICE
Bill & Marcia Brant
6115 SW 137th Avenue
Archer, FL 32618
(352) 495-9024
FAX (352) 495-9781
e-mail: GrmtRodent@aol.com
© All Rights Reserved

Index to Scientific Names of Amphibians and Reptiles for Volume 37 (2002)

January 1-20 February 21-44 March 45-64	April 65-80 May 81-96 June 97-116	July 117-136 August 137-156 September 157-176	October 177-192 November 193-208 December 209-232
Abronia chiszari 67, 68	Blanus tingitanus 184	tasmai 150	hippocrepis 184
Acanthosaura crucigera 62	Boa	vindumi 150	viridiflavus 13
Acrantophis 14	constrictor 14	superciliosa	Corallus
Acris crepitans 109	imperator 51	crombiei 150	annulatus 142
Actinemys marmorata 37, 193	Bogertophis	superciliosa 150	caninus 142, 143
Agama aculeata 65	subocularis	Caretta caretta 38, 221	cookii 141, 142
Agkistrodon	amplinotus 51	Carettochelys insculpta 151	enydris 141
contortrix mokasen 125, 126	subocularis 51	Carphophis amoenus amoenus 124	cookii 141
piscivorus 62, 173	subocularis × amplinotus 51	Causus maculatus 174	enydris 141
conanti 118	Boiga irregularis 86, 204	Chamaeleo pardalis 62	grenadensis 141-143
Alytes	Bothrops	Chamaeleolis chamaeleonides 62	hortulanus 141-143
cisternasii 38, 57	alcatraz 186	Chelodina	ruschenbergerii 141, 142
muletensis 172	ammodytoides 101	cani 150	Cordylus
obstetricans 57	atrox 173	novaeguineae 150	beraduccii 184
Ambystoma 17	insularis 186	Chelonia mydas 40, 206, 221	jonesii 184
gracile 9	jararaca 186	Chelonoidis carbonaria 183	nyikae 184
jeffersonianum 22, 196	Bufo 137, 161, 185	Chelydra	rhodesianus 184
laterale 174, 211, 213	americanus 26, 109	serpentina 38	rivae 184
maculatum 22, 174, 196, 205, 211, 213	“alani” 211, 212	serpentina 23, 196, 212, 213	tropidosternum 184
mavortium 198	americanus 22, 196, 211, 213	Chilomeniscus	ukingensis 184
opacum 149, 205	boreas 149, 185	cinctus 75	warreni 184
tigrinum 198	bufo 137	punctatissimus 75	Coronella girondica 184
tigrinum 25-28	canorus 185	savagei 75	Crotalus
Ameiva 133	himalayanus 158	stramineus 75	adamanteus 173
Amphiesma stolata 218	latastii 158	Chionactis occipitalis 172	atrox 51, 52, 173, 180
Amyda 40	marinus 56, 86, 107-108, 148	Chitra 40	cerastes 31, 157
Aneides vagrans 9	melanostictus 158, 159	Christinus marmoratus 76	cerberus 199
Anilius 62	hazarensis 159	Chrysemys	durissus terrificus 173
Anolis	melanostictus var. himalayanus 158	picta 212, 213	horridus 125, 126
cristatellus 186	microscaphus 199	marginata 23, 196	lepidus
sagrei 186	olivaceus 158, 159	Chrysopelea 172	klauberi 51, 52, 180
smallwoodi 62	pseudoraddei 158	paradisi 172	lepidus 51, 52, 180
Anops kingii 62	baturae 159	Clelia clelia 142	molossus molossus 52, 157, 180
Apalone	pseudoraddei 159	Clemmys 37, 193	oreganus 198
mutica 40	siachinensis 158, 159	guttata 37, 75, 193	pricei pricei 180
spinifera 40, 205	stomaticus 158, 159, 216-219	insculpta 37, 193	scutulatus 173
Arizona	surdus 158, 159	marmorata 37, 193	scutulatus 52, 180
elegans	viridis 57, 158	muhlenbergii 14, 37, 38, 193	viridis
elegans 51	pseudoraddei 159	Clonophis 122	cerberus 199
expolita 51, 180	zugmayeri 159	kirtlandii 125, 127	oreganus 39
philipi 180	Bungarus caeruleus 218	Cnemidophorus 133	viridis 198
Aspideretes 40	Calabaria 62	deppii 133	willardi silus 180
Aspidites 62	Callisaurus 5	lemniscatus 133	Crotaphytus collaris 62, 94, 206
Aspidoscelis 133	draconoides 157	longicaudus 100, 133	Cyclanorbis
deppii 133	Candoia 62	marmoratus 198	elegans 40
neomexicana 199	carinata 150	neomexicanus 199	senegalensis 40
sexlineatus 133	carinata 150	sexlineatus 133	Cyclura nubila lewisi 153
tigris 133	tepedeleni 150	tigris 133, 157, 198	Cylindrophis 62
Batrachoseps attenuatus 9, 172	paulsoni 150	Coleonyx variegatus 157	Dendrobates
Bitis	medowelli 150	Coluber	auratus 130
arietans 174	paulsoni 150	constrictor	pumilio 150
gabonica 174	rosadoi 150	constrictor 121, 125, 126	Dermochelys coriacea 221
nasicornis 174	sadlieri 150	foxi 120	Desmognathus
		paludicolor 120	fuscus 196

fuscus 22	Gastropyxis smaragdina 174	Leiopalma hamiltoni 174	Notophthalmus
monticola 62	Geochelone	Leiosaurus belli 101	viridescens 133, 211, 213
ochrophaeus 22, 196	carbonaria 48	Lepidochelys olivacea 221	viridescens 22, 196
quadrimaculata 62	pardalis 48	Leptophis majalis 128	Opheodrys
Diadophis 121	yniphora 149	Leptotyphlops 198	aestivus 125, 128
punctatus	Gerarda prevostiana 148	australis 101	majalis 128
edwardsii 23, 123, 125, 196,	Gloydus shedaoensis 184	Lichanura trivirgata 47	vernalis 123, 125, 212, 213
212, 213	Glyptemys 193	Limnonectes 161	Orlitia borneensis 220
punctatus 85-86	insculpta 37, 193	limnocharis 160, 216	Osteopilus septentrionalis 86
Dicrodon 133	muhlenbergii 37, 193	syhadrensis 160, 216	Oxybelis aeneus 53
Diploglossus legnotus 67, 68	valentinensis 37	Liolaemus	Paa 161
Dipsosaurus dorsalis 157, 172	Gopherus berlandieri 39	cf. melanops 101	barmoachensis 160, 161
Dogania 40	Graptemys	cuyanus 101	hazarensis 160, 161
Draco melanopogon 172	pseudogeographica kohnii 150	darwinii 100, 101	sternosignata 160, 161
Echis carinatus 218	Heosemys	gracilis 100, 101	vicina 160, 161
Elaphe 121	grandis 220	grosseorum 100-101	Paleosuchus trigonatus 142
emoryi 198, 221	spinosa 220	laurenti 101	Paramesotriton laoensis 174
guttata 198, 221	Hemidactylium scutatum 22, 196	olongasta 101	Pareas 62
obsoleta 40, 198	Heterodon	Liophryne schlaginhaufeni 174	Pedioplanis namaquensis 65
obsoleta 23, 125, 126, 196	kennerlyi 52, 180	Lissemys 40	Pelamis platurus 194-195
quadrivittata 118	nasicus 31	Loxocemus 62	Pelobates 186
quadrivirgata 223	platirhinos 125, 126	Mabuya striata sparsa 65	Pelochelys 40
slowinskii 221	Homonota darwini 101	Macroprotodon cucullatus 184	Pelodytes 186
Eleutherodactylus	Homopus 1	Macrovipera mauritanica 184	Phaeognathus hubrichti 185
coqui 132	areolatus 1	Malaclemys terrapin 45, 174	Phrynosoma
planirostris 132	signatus signatus 1	Malpolon monspessulanus 184	cornutum 75
Elgaria	Hoplobatrachus	Masticophis	ditmarsii 75
cedrosensis 40	tigerinus 160, 161, 216, 218	flagellum	douglasii 75
coeluria 9	Hoplocephalus	lineatulus 52, 180	hernandesi 75
kingi ferruginea 215	bungaroides 55	testaceus 52	mcalli 75
paucicarinata 40	stephensii 185	testaceus × lineatulus 52	modestum 75
velazquezi 40	Hyla	taeniatus	platyrhinos 75, 157
Emydoidea blandingii 94, 193	arenicolor 223	girardi 53	Pituophis 177-179
Emys	chrysoscelis 109, 211	Metaphrynella sundana 223	catenifer
marmorata 193	cinerea 195	Microhyla ornata 159, 161, 216	affinis 53, 180
orbicularis 193	crepitans 183	Microlophus albemarlensis 206	catenifer 177, 179
Engystoma ornatum 159	regilla 149, 184, 185, 195	Micrurus 173	sayi 47, 177, 179
Ensatina eschscholtzii 9	squirella 93	Naja	melanoleucus
Epicrates 14, 83	versicolor 22, 23, 26, 196, 211,	naja 130	lodingi 177
monensis 143	213	atra 39	melanoleucus 177, 179
Eretmochelys imbricata 221	Hymenochirus boettgeri 223	nigricollis 174	Plethodon
Eryx jaculus 184	Hypsiglena	nivea 65	cinereus 22, 196, 210, 211, 212,
Eumeces latiscutatus 223	torquata 157	Nanorana pleskei 160	213
Eunectes 14	janii 52, 180	Natrix	glutinosus 22, 196
murinus 143	texana 52	maura 13, 184	kentuckyi 13
Euphlyctis	Kentropyx 133	natrix 184	ocmulgee 149
cyanophlyctis 160, 161, 216	Lacerta bedriagae 13	Necturus	Podarcis
cyanophlyctis 160	Lampropeltis 47	maculosus maculosus 137-138, 198	sicula 13
microspinulata 160	calligaster 109	Nephrurus milii 76	tiliguerta 13
seistanica 160	getula 198	Nerodia	Podocnemis
Eurycea	californiae 172	rhomبifer	expansa 93, 151
bislineata 22, 196	nigra 37	blanchardi 67	unifilis 93
cirrigera 149	splendida 52, 180	rhomبifer 68	Pristidactylus fasciatus 100
guttolineata 149	triangulum	werleri 67	Psammophis 65
quadridigitata 149	amaura 13	sipedon 211, 212, 213	schokari 184
Exiliboa 62	elapsoides 13	sipedon 23, 123, 125, 196	Pseudacris
Farancia 120	sypila 13	taxispilota 118	crucifer
erytrogramma erytrogramma 198	triangulum 23, 24, 125, 126,	Niveoscincus	crucifer 22, 23, 196, 211, 213
Fordonia leucobalia 148	196, 210, 212, 213	metallicus 224	regilla 9, 185
Gastrophryne carolinensis 93	Laticauda colubrina 76, 202	ocellatus 37, 94	Pseudaspis cana 65

Pseudoeurycea aquatica 38	arenicolus 198, 199	storerioides 181	Triturus alpestris 151
Pseudohaje goldii 93	belli 29-31, 139, 163	Tarentola mauritanica 224	Trogonophis wiegmanni 184
Pseudonaja textilis 206	clarkii clarkii 164	Taricha torosa 149	Tropidophis 62
Pseudotriton ruber ruber 22, 196	cyanostictus 164	Teius 133	haetianus 204
Ptyas mucosus 218	graciosus 198	Telmatobius 133	hendersoni 204
Ptychozoon kuhli 204	horridus albiventris 164	affinis halli 133	maculatus 204
Python	jarrovii jarrovii 164, 180	albiventris 133	Tupinambis rufescens 101
curtus 13	magister bimaculosus 165	crawfordi 133	Typhlops
regius 45	merriami	culeus 133	bibronii 93
Pyxis planicauda 149	annulatus 165	marmoratus 133	caymenensis 130
Rafetus	ballingeri 165	Terrapene carolina carolina 196	fornasinii 93
leloii 220	williamsi 165	Testudo	Uma
swinhoei 40	nelsoni	hermanni 224	exsul 4, 5
Ramphotyphlops 198	barrancorum 165	kleinmanni 39	paraphygas 5
Rana 137	nelsoni 165	marginata 94	paraphygas 4-7
berlandieri 205	poinsettii	muhlenbergii 37	paraphygos 5
boylli 2-3	macrolepis 165, 166	weissingeri 94	Ungaliophis 62
breviceps 161	poinsettii 165, 166	wernerii 39	Uperodon systoma 159, 161
catesbeiana 23, 133, 149, 195,	polylepis 166	Thamnophis 122	Uta
196, 205, 211, 213	robisoni 166	atratus 183	stansburiana 62, 157, 198
clamitans 137, 148, 151, 213	scalaris 139-140	brachystoma 122, 127	nevadensis 199
melanota 22, 23, 196, 211	brownorum 140	couchii 183	Varanus
cyanophlyctis 160	scalaris 140	cyrtopsis	albigularis 65-66, 98-99
hazarensis 161	unicanthalis 140	collaris 53, 180	bengalensis 218
limnocharis 160	slevini 166	cyrtopsis 53, 180	exanthematicus 45, 76
muscosa 185	sp. (grammicus group) 164	elegans 9	albigularis 65
onca 110	undulatus 29-31, 94, 139, 198, 204	elegans 185	griseus 218
palustris 22, 23, 196	consobrinus 29-31, 139	eques	niloticus 204
pipiens 23, 24, 133, 196, 211,	cowlesi 139	eques 180	Vipera
213, 224	elongatus 139	megalops 54	ammodytes 148
seistanica 160	erythrocheilus 139	virgatenuis 54, 180	aspis 148
sphenocephala 109	garmani 139	errans 54, 181	aspis 148
sternosignata 161	hyacinthinus 139	hammondii 183	atra 148
syhadrensis 160	speari 29, 31, 139, 166	marcianus marcianus 54, 180	francisciredi 148
sylvatica 21, 22, 23, 76, 196, 211,	tedbrowni 139	melanogaster 183	hugyi 148
213	tristichus 139	chihuahuaensis 54	zinnikeri 148
systoma 159	undulatus 139	rufipunctatus 54, 180, 183	berus 148
temporaria 132, 137	variabilis 62	sauritus 123, 126, 127	latasti 184, 224
tigerina 160	virgatus 29, 31, 38, 166	septentrionalis 23, 127, 196,	Virginia
utricularia 133	Scopaeabronia 67	210, 212, 213	valeriae
vicina 161	Sistrurus	sirtalis 9, 14, 125, 127, 150, 198	pulchra 125
Regina septemvittata 123, 125, 127	catenatus 109-110	dorsalis 54	valeriae 125
Rhabdophis tigrinus 223	catenatus 97, 125, 126, 206	sirtalis 23, 126, 127, 196, 210,	Xantusia
Rhacophorus nigropalmatus 172	edwardsii 206	212, 213	gracilis 14
Rhadinaea macdougalli 68	tergeminus 206	validus 183	henshawi 14
Rhinocheilus lecontei tessellatus 180	Sonora	validus 180-182	gracilis 14
Rhinotyphlops	semiannulata 53	Thelotornis	Xenochrophis piscator 218
lalandei 93	semiannulata 180	capensis oatesii 75	Xenopeltis 62
mucruso 93	taylori 180	kirtlandii 75	Xenopus 27, 145
schlegelii petersii 93	Spalerosophis dolichospilus 184	mossambicanus 75	
schlegelii schlegelii 93	Spea 186	usambaricus 75	
Salvadora	Sphenodon punctatus 62	Tiliqua	
deserticola 53	Sphenophryne cornuta 173	nigrolutea 204	
grahamiae grahamiae 53	Stilosoma extenuatum 118	scincoides 94	
Sanzinia 14	Storeria	Tomopterna breviceps 160, 161, 216	
Sarcosuchus imperator 11, 58	dekayi	Trachemys	
Sauromalus obesus 157	dekayi 23, 24, 125, 127, 196	gaigeae 199	
Scaphiopus 186	occipitomaculata	scripta 150	
couchii 223	occipitomaculata 125, 127, 196-	Trimeresurus flavoviridis 86	
Sceloporus 163-167	197, 212, 213	Trionyx triunguis 40	

Author–Title Index for Volume 37 (2002)

January 1-20	April 65-80	July 117-136	October 177-192
February 21-44	May 81-96	August 137-156	November 193-208
March 45-64	June 97-116	September 157-176	December 209-232
Alt, N.	<i>Crotalus molossus</i> in the El Pinacate Region, Sonora, Mexico		157
Alspaw, D.	Breeding <i>Pituophis</i>		177
Anton, T. G.	Book Review: <i>Problem Snake Management: The Habu and the Brown Treesnake</i> edited by Gordon H. Rodda, Yoshio Sawai, David Chiszar and Hiroshi Tanaka		86
Auth, D.	See Lemos-Espinal, J. A.		
Avila, L. J., C. H. Perez, M. Morando and N. Frutos	New Records for <i>Liolaemus grosseorum</i> Etheridge, 2001 (Reptilia: Squamata: Liolaemidae) from Northwestern Patagonia		100
Barten, S. L.	Book Review: <i>Amphibian Medicine and Captive Husbandry</i> edited by Kevin M. Wright and Brent R. Whitaker		69
Barten, S. L.	Book Review: <i>Neotropical Treeboas: Natural History of the Corallus hortulanus Complex</i> by Robert W. Henderson		141
Bayless, M. K., K. H. Switak and R. W. Patterson	First Verified Observation of the Rock Leguaan (<i>Varanus albigularis</i> Daudin, 1802) in Kgalagadi Transfrontier Park, Republic of South Africa; with Notes on the Flora and Fauna		65
Beltz, E.	HerPET-POURRI		9, 33, 58, 71, 87, 110, 130, 143, 169, 200, 220
Beltz, E.	Letter		41
Binns, J.	Letter		153
Breese, P.	In Memoriam: Sean McKeown		152
Chiszar, D., and H. M. Smith	Antique Herpetological Postcards		81
Chiszar, D.	See also Lemos-Espinal, J. A.		
Chiszar, D.	See also Pérez-Higareda, G.		
Chiszar, D.	See also Smith, H. M.		
Cochran, P. A.	Book Review: <i>The Last River Rat: Kenny Salwey's Life in the Wild</i> by J. Scott Bestul and Kenny Salwey		8
Conant, R.	Herp Collecting in Florida in 1930		117
Fassbender, R., and D. J. Watermolen	Bird Predation on the Mudpuppy (<i>Necturus maculosus maculosus</i>)		137
Frutos, N.	See Avila, L. J.		
Gillingham, J. C.	See Placyk, J. S., Jr.		
Glennemeier, K.	Results from 2002 Chicago Wilderness Great Herp Searches		147
Gray, B. S.	Observations on the Herpetofauna of the Asbury Woods Greenway in Pennsylvania		21
Gray, B. S.	A Key to the Shed Skins of Northeastern Snakes		121
Gray, B. S.	An Addition to the Herpetofauna of the Asbury Woods Greenway, Erie County, Pennsylvania		196
Harding, J. H.	New Names for Old Turtles		193
Hoser, R. T.	Book review: <i>Tadpoles of South-east Australia</i> by Marion Anstis		55
Huerta-Ortega, S. M.	See Ponce-Campos, P.		
Janus, L.	See Walley, H. D.		
Jones, S. N.	See Kapfer, J. M.		
Kapfer, J. M., and S. N. Jones	A Method for Rearing and Keeping the Eastern Tiger Salamander, <i>Ambystoma tigrinum</i> <i>tigrinum</i>		25
Khan, M. S.	A Checklist and Key to the Amphibia of Pakistan		158
Khan, M. S.	Riparian Tadpoles of Punjab, Pakistan: <i>Bufo stomaticus</i> Lütkin, 1862		216
Lemos-Espinal, J. A., D. Auth, D. Chiszar and H. M. Smith	Observations on the Chihuahua Fringe-toed Lizard, <i>Uma paraphygas</i>		4
Lemos-Espinal, J. A., D. Auth, D. Chiszar and H. M. Smith	Year 2000 Data on Distribution and Variation of Some Lizards of the <i>Sceloporus undulatus</i> Complex in Chihuahua, Mexico		29
Lemos-Espinal, J. A., D. Auth, D. Chiszar and H. M. Smith	Year 2000 Snakes from Chihuahua, Mexico		51
Lemos-Espinal, J. A., D. Auth, D. Chiszar and H. M. Smith	Year 2001 Snakes from Chihuahua, Mexico		180

Lemos-Espinal, J. A., D. Chiszar and H. M. Smith	The 2001 Collection of <i>Sceloporus</i> (Reptilia: Sauria) from Chihuahua, Mexico	163
Lemos-Espinal, J. A., H. M. Smith and D. Chiszar	Miscellaneous 2001 Lizards from Chihuahua, Mexico	102
Lemos-Espinal, J. A.	See also Smith, H. M.	
Loehr, V. J. T.	Male Aggression in Captive Namaqualand Speckled Padlopers, <i>Homopus signatus signatus</i>	1
López-Luna, M. A.	See Pérez-Higareda, G.	
Mollier, M.	See Norman, B. R.	
Morando, M.	See Avila, L. J.	
Nash, M.	Great Herp Searching	146
Norman, B. R., and M. Mollier	Concerning an Albino Foothill Yellow-legged Frog, <i>Rana boylei</i> (Amphibia, Anura, Ranidae), from Red Cap Creek Drainage, Humboldt County, California	2
Novotny, R.	Book Review: <i>Life, Love, and Reptiles: An Autobiography of Sherman A. Minton, Jr., M.D.</i>	32
Novotny, R.	Letter	95
Novotny, R.	Letter	171
Patterson, R. W.	See Bayless, M. K.	
Perez, C. H.	See Avila, L. J.	
Pérez-Higareda, G., M. A. López-Luna, D. Chiszar and H. M. Smith	Additions to and Notes on the Herpetofauna of Veracruz, Mexico	67
Phillips, C. A.	Book Review: <i>Amphibians and Reptiles of Pennsylvania and the Northeast</i> by Arthur C. Hulse, C. J. McCoy and Ellen J. Censky	168
Placyk, J. S., Jr., and J. C. Gillingham	Biogeography of the Herpetofauna of the Beaver Archipelago: A Synthesis and Reevaluation	210
Ponce-Campos, P., and S. M. Huerta-Ortega	Notes on <i>Elgaria kingi ferruginea</i> in Jalisco, México: Altitude, Distribution and Habitat	215
Redmer, M.	Book Review: <i>Anuran Communication</i> edited by Michael J. Ryan	57
Redmer, M.	Book Review: <i>Amphibians of Central and Southeast Africa</i> by Alan Channing	129
Rossi, J., and R. Rossi	“Hoop Snake” Found—Old Wife’s Tale May Have Basis in Fact: Autophagous Behavior in a Southern Ring-necked Snake, <i>Diadophis punctatus punctatus</i>	85
Rossi, R.	See Rossi, J.	
Smith, H. M., D. Chiszar, J. A. Lemos-Espinal, G. J. Watkins-Colwell and F. van Breukelen	Concurrent Existence of Relictual and Contemporary Subspecific Intergrade Populations	139
Smith, H. M.	See Chiszar, D.	
Smith, H. M.	See Lemos-Espinal, J. A.	
Smith, H. M.	See Pérez-Higareda, G.	
Smith, K. G.	Book Review: <i>The Cane Toad: The History and Ecology of a Successful Colonist</i> by Christopher Lever	107
Stuart, J. N.	Book Reviews: <i>Scientific and Standard English Names of Amphibians and Reptiles of North America North of Mexico, with Comments regarding Confidence in our Understanding</i> by the Committee on Standard English and Scientific Names (Brian I. Crother, Chair), and <i>Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles and Crocodilians, 5th Edition</i> by Joseph T. Collins and Travis W. Taggart	197
Sullivan, S.	A Trip to Carlyle Lake	109
Switak, K. H.	Field Notes for <i>Varanus albigularis</i> in Southern Africa	98
Switak, K. H.	Extraordinary Feeding Behavior for the Yellow-bellied Seasnake, <i>Pelamis platurus</i>	194
Switak, K. H.	See also Bayless, M. K.	
van Breukelen, F.	See Smith, H. M.	
Walley, H. D.	An Incident of Envenomation from <i>Heterodon nasicus</i>	31
Walley, H. D., and L. Janus	Remarks on the type designation of <i>Leptophis majalis</i> Baird and Girard 1853 (= <i>Opheodrys aestivus majalis</i> Grobman 1984)	128
Watermolen, D. J.	Dealing with Reptile Ticks	45
Watermolen, D. J.	See also Fassbender, R.	
Watkins-Colwell, G. J.	See Smith, H. M.	

Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail: GrmtRodent@aol.com.

For sale: murine-pathogen-free rats and mice available in all sizes, live or frozen: pinkies, fuzzies, crawlers, small, medium and large. Frozen crawler mice in lots of 2000, \$.17 each. Also available, full grown hairless mice. FOB shipping point. Master Card accepted. Call (518) 537-2000 between 8:00 A.M. and 5:00 P.M. or write SAS Corporation, 273 Hover Avenue, Germantown NY 12526 for prices and additional information.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. We feed our colony a nutritionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. Mice starting from: pinks, \$.17 each; fuzzies, \$.24 each; hoppers, \$.30 each; weanling, \$.42; adult, \$.48. Rats: starting with pinks at \$.45 each, to XL at \$1.80 each. Discount prices available. We accept Visa, MC, Discover or money orders. P.O. Box 85, Alpine TX 79831. Call us **toll-free** at (800) 720-0076 or visit our website: <http://www.themousefactory.com>.

For sale: from Bayou Rodents, excellent quality feeder mice and rats. Every size available. Pinks starting at \$20/100. Orders are shipped by overnight service Monday thru Thursday. We accept Visa, MasterCard and Discover. For more info, contact Rhonda or Peggy, (800) 722-6102.

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice available: small newborn pinks up to jumbo adults. Prices start at \$25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: **Pillstrom Snake Tongs** are available from the manufacturer and are shipped worldwide. Lengths/prices: 26"/\$58, 36"/\$59, 40"/\$60, 46"/\$61, 50"/\$62. Shipping and handling costs in the U.S.: \$8 for the first tong, \$1 for each additional. Pillstrom Tongs, 4617 Free Ferry Road, Fort Smith AR 72903-2363, (479) 452-3001 phone, (479) 452-3671 fax. E-mail: pillstromt@aol.com. Website <members.aol.com/mpillstrom>.

For sale: herp books. *Snakes of the American West* by Charles Shaw and Sheldon Campbell, 1974, 292 pp., 74 color photos, DJ (h), \$36; *The Frog Book* by Mary Dickerson, 1969 Dover reprint (1906), 253 pp., 286 b&w photos, 16 color plates, (s), \$16; *Poisonous Snakes, Plants, and Black Widow Spider of Louisiana* by James Gowanloch and Clair Brown, 1943, 133 pp., b&w photos and drawings, inscribed by co-author, (s), \$25; *The Snakes of Ecuador, A Checklist and Key* by James A. Peters, 1960, pp. 491-541, (s), \$20; *Some Common Snakes and Lizards of Australia* by David McPhee, 1963 (1959), 125 pp., many b&w photos, small pocketbook size, spine slightly scuffed, (s), \$26; *Australia's Venomous Wildlife* by John Stackhouse, 1972 (1970), 144 pp., many color and b&w photos, DJ, (h), \$25; *Snakes Commonly Found in the Cairns Area*, 1992, large sheet folded into thirds (equiv. to 6 pp.), 17 color photos, \$5. All books in excellent condition except as noted. Prices postpaid for orders \$25 and over, \$2.50 postage and handling for orders under \$25. William R. Turner, 6014 Blue Ridge Drive, Apt. A, Highlands Ranch, CO 80130; (720) 344-6197; E-mail: turnerbmrk@prodigy.net.

For sale: For pick-up only—will not ship. Oceanic Lizard Lounge tank (48 × 17 × 18")—granite frame; 48" fluorescent light strip; tank stand, metal gray textured, double (upper and lower), custom white wood base installed in top position; tank cover, interlocking glass sections w/light sockets, including ceramic bulb; ZooMed Repti-Therm heating pad installed on base of tank. All items are in like-new/excellent condition. Terms of sale: Need to sell everything as a set; offer price—\$350 or closest offer; cash only. Robert Cohen, (847) 433-2531. E-mail: robertcohen@alum.mit.edu.

For sale: Taking orders for 2003 **rare Honduran milksnakes** including ghosts, snows, tricolor hypos, tangerine albinos, triple hets and many more. Some types already sold out. **Discounts** for early orders (20% off for orders before January 1). Also, rare pyros, *Lampropeltis pyromelana*, (amels, anerythristics, hets etc.) Terry Dunham, Albino Tricolors, Florida, (727) 824-0705; rtunham@albinotricolors.com.

For sale: Rat snakes. Cunningham's *Elaphe*—Specializing in rare *Elaphe*. Working with *E. dione*, *E. ridleyi*, *E. climacophora*, corns, and many more. Rick, (309) 353-9661. E-mail: rick1@ntslink.net. Web site: <http://www.cunninghamselaphe.com>.

Herp tours: Adventure trips to **Madagascar!** Journey somewhere truly unique to seek and photograph nature on the world's least-studied mini-continent. For maximum herp fun and discovery, join Bill Love as we go where few people will ever venture in their lives. Let his experience assure a comfortable tour finding the most colorful and bizarre species on the planet! Get all the details at Blue Chameleon Ventures' comprehensive new website: <<http://www.bluechameleon.org>>, E-mail: bill@bluechameleon.org, or call (239) 728-2390.

Herp tours: Experience the Amazon! Road-ride in Costa Rica! See and photograph herps where they live, have fun doing it, make good friends and contacts, and best of all . . . **relax!** From wildlife tours to adventure travel, **GreenTracks, Inc.** offers the best trips led by internationally acclaimed herpers and naturalists. See our website <<http://www.greentracks.com>> or call (800) 9-MONKEY. E-mail: greentracks@frontier.net.

Pet Services in Your Home: **All Pets, Unlimited** is owned by a licensed, certified and bonded veterinary lab technician with >20 yrs. experience. This service specializes in patient care as well as caring for your pets in your absence. **Exotics** are welcome and the service is veterinarian recommended. Please call Beverly McGrane for pricing information @ (312) 328-0648.

Wanted: big-headed turtles; mata mata turtles; Mexican giant mud turtles (*Staurotypus triporcatus*); exceptionally large common snappers (45 lbs. & up); large alligator snappers (over 90 lbs.); spectacled caiman from Trinidad, Tobago and Surinam; dwarf caiman; smooth-fronted caiman; albino turtles (except red-eared sliders). Walt Loose, (610) 926-6028, 9:00 A.M. – 1:00 P.M. or after 11:30 P.M. Eastern Time.

Line ads in this publication are run free for CHS members — \$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: <MADadder0@aol.com>.

News and Announcements

ELECTION RESULTS

As a result of the elections held November 27, 2002, the following officers and members-at-large will serve on the CHS Board of Directors for the year 2003.

President: Lori King
Vice-president: Linda Malawy
Treasurer: Jim Hoffman
Recording Secretary: Zoe Magierek
Corresponding Secretary: Erik Williams
Publications Secretary: Michael Redmer

Membership Secretary: Michael Dloogatch
Sergeant-at-arms: Joan Moore
Members-at-large: Tom Anton
Darin Croft
Jenny Vollman
Immediate Past President: Jack Schoenfelder

CHS NEEDS VOLUNTEERS

Have you ever thought about becoming more involved with CHS? Not-for-profit groups like CHS could not function without occasionally capitalizing on the volunteer efforts and professional skills contributed by our members. The CHS board has in past months identified a number of specialized skills which may be needed in the future to help with the mission and activities of the society. We will periodically post volunteer needs in this section, and will make similar announcements at monthly general meetings.

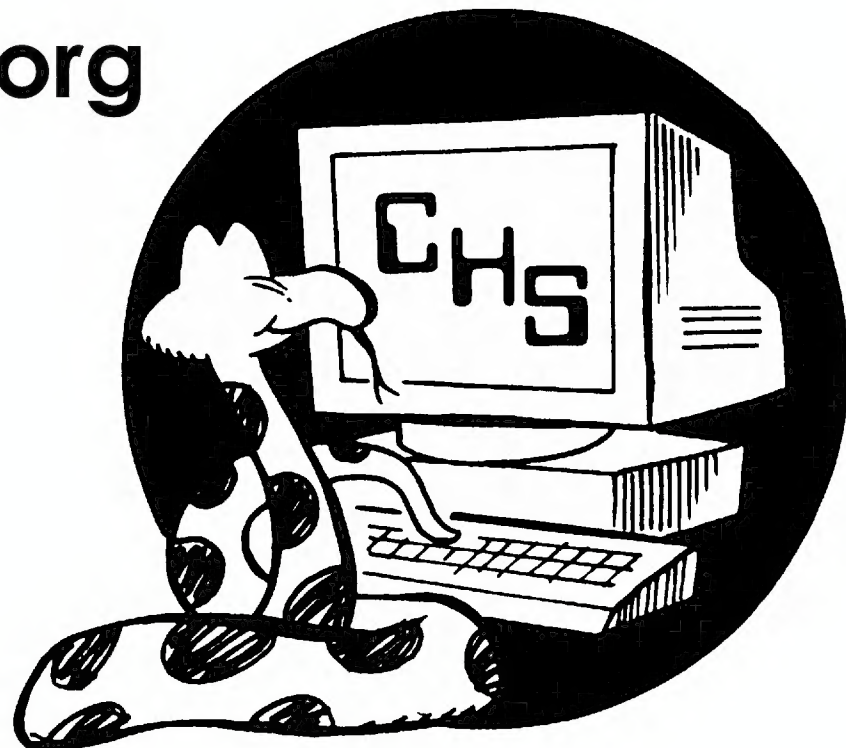
Our first needs: *LAYOUT, GRAPHIC DESIGN, PRINTING CONSULTANT.* The CHS is considering producing a series of high-quality, full-color educational posters. We will need help and consultation from members with professional backgrounds in graphic design and layout. Familiarity with color printing (additive and subtractive color correction) would also be helpful. If interested and qualified, E-mail Mike Redmer (CHSPublications@aol.com).

Next time you surf the WorldWide Web, crawl, run, slither, slide, jump, or hop over to the CHS web site!

www.chicagoherp.org

You'll find:

- Announcements
- CHS animal adoption service
- CHS events calendar & information
- Herp news
- Herp links
- Meeting/guest speaker information
- Photos of Illinois amphibians & reptiles
- Much, much more!



Chicagoherp.org is accepting applications for banner advertisements or links from herpetoculturists and manufacturers of herp-related products. Visit the site and contact the webmaster for details on how you can sponsor CHS!

UPCOMING MEETINGS

The December meeting of the Chicago Herpetological Society was held on Wednesday, December 18, earlier in the month than usual because of the Christmas Holiday. In January we will return to our accustomed last Wednesday of the month meeting day, 7:30 P.M., at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. At the January 29 meeting **John Brueggen**, the general curator at the St. Augustine Alligator Farm in Florida, will speak to us about crocodilian behavior.

The regular monthly meetings of the Chicago Herpetological Society now take place at Chicago's newest museum — the **Peggy Notebaert Nature Museum**. This beautiful new building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the January 17 board meeting, to be held at the North Park Village Administration Building, 5801 North Pulaski Road, Chicago. To get there take the Edens Expressway, I-94, and exit at Peterson eastbound. Go a mile east to Pulaski, turn right and go south to the first traffic light. Turn left at the light into the North Park Village complex. At the entrance is a stop sign and a guardhouse. When you come to a second stop sign, the administration building is the large building ahead and to your left. There is a free parking lot behind the building.

The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info call Lisa Koester, (773) 508-0034, or visit the CTC website: <http://www.geocities.com/~chicagoturtle>.

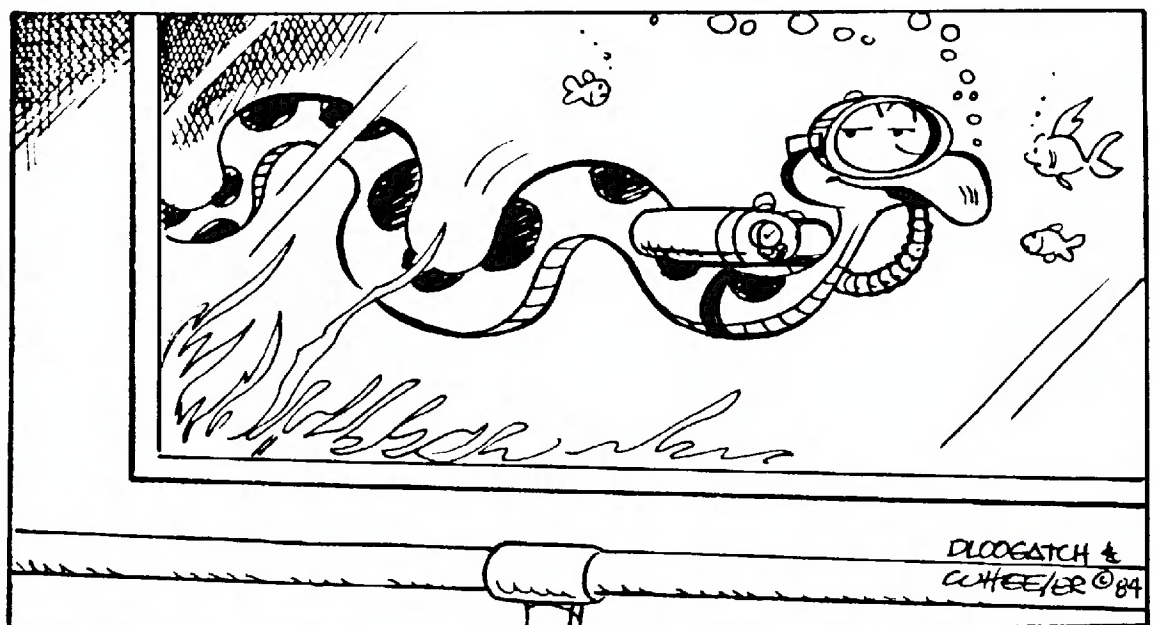
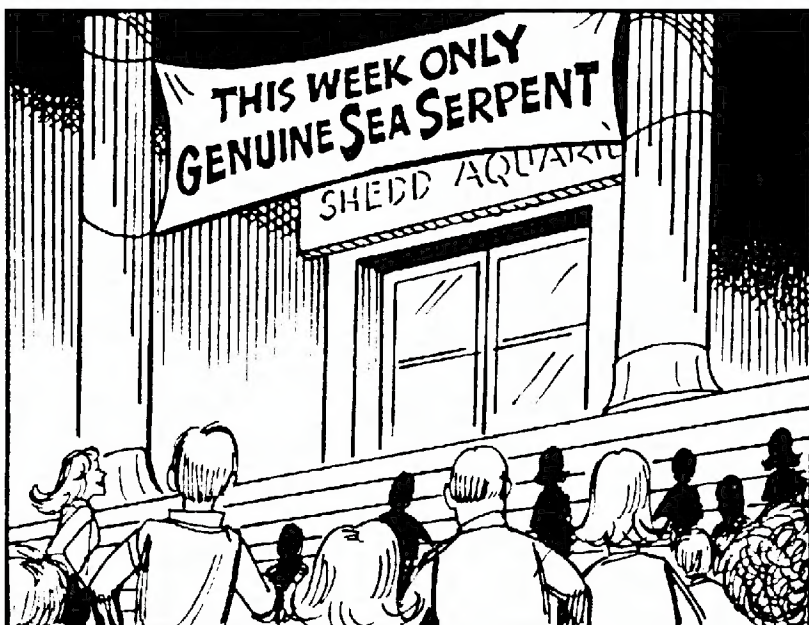
HERP OF THE MONTH

Each monthly meeting will showcase a different herp. CHS members are urged to bring one specimen of the “Herp of the Month” to be judged against the entries from other CHS members. Prizes will be awarded to the top three winners. In January, members are invited to bring **ball pythons**. In February, bring **any herp with an aberrant color or pattern**.

DUES INCREASE

Effective November 1, 2002, the annual cost of an Individual Membership in the Chicago Herpetological Society increased by \$3 — from \$22 to \$25. Similarly, the cost of a Family Membership has gone up from \$25 to \$28 per year. All other categories of membership are unchanged. This is our first dues increase since August 1993.

THE ADVENTURES OF SPOT



Periodicals Postage
Paid at Chicago IL

CHICAGO HERPETOLOGICAL SOCIETY

Affiliated with the Chicago Academy of Sciences

2430 North Cannon Drive • Chicago, Illinois 60614
